THE MODERN SCHOOLMAN

A quarterly journal of philosophy

Volume XXXII, Number 3 MARCH 1955

COMPLEXITY OF MATHEMATICAL LOGIC
Maurice Meigne, S.J.

ETERNAL MATTER AND FORM IN SIGER OF BRABANT
Lottie H. Kendzierski

EFFICIENT CAUSATION AND THE CATEGORIES
Arthur A. Vogel

THE CAUSAL PROPOSITION —PRINCIPLE OR CONCLUSION? *Continued*
Joseph Owens, C.SS.R.

Notes and Discussion, Book Reviews, Bibliography

Saint Louis University

The College of Philosophy and Letters and the Department of Philosophy, SAINT LOUIS

The Modern Schoolman *is a quarterly journal of philosophy, dedicated to furthering the work begun by the great Schoolmen of the Middle Ages.*

GEORGE P. KLUBERTANZ, S.J.
Editor

CHARLES W. MULLIGAN, S.J.
Assistant Editor

Associate Editors

James A. McWilliams, S.J., Vernon J. Bourke, James Collins, William L. Wade, S.J., Robert J. Henle, S.J., Linus J. Thro, S.J.

Corresponding Editors

Belgium and France: Joseph de Finance, S.J., Vals, Le Puy en Velay, Haute-Loire; *Latin America:* Dr. Oswaldo Robles, Mexico City; *The British Isles:* The Reverend D. J. B. Hawkins, Godalming; *Germany:* Walter Brugger, S.J., Berchmanskolleg, Pullach bei Munchen; *India:* J. Pasi, S.J., Mangalore.

EUGENE DUTKIEWICZ, S.J.
Business Manager

Assistants: Robert R. Barr, S.J.; James H. Breininger, S.J.; Clifford E. Brown, S.J.; Patrick J. Burns, S.J.; J. Philip Carey, S.J.; Elmer J. Carroll, S.J.; Royden B. Davis, S.J.; William V. Dych, S.J.; Gilbert R. Gadzikowski, S.J.; C. Edward Gilpatric, S.J.; Milton A. Gonsalves, S.J.; Robert P. Hart, S.J.; Edward J. Herson, S.J.; Carroll C. Kearley, S.J.; Aloysius P. Kelley, S.J.; Carl A. Lofy, S.J.; Emile G. McAnany, S.J.; Lee E. McMahon, S.J.; William E. McMahon, S.J.; Patrick H. McNamara, S.J.; Francis J. Mininni, S.J.; William B. Neenan, S.J.; Louis W. Roberts, S.J.; David D. Schmidt, S.J.; Eugene F. Shaw, S.J.; Marvin D. Skillingstad, S.J.; Edward C. Spethman, S.J.; William J. Sullivan, S.J.

THE MODERN SCHOOLMAN is published in November, January, March, and May. Subscription price, $4.00 a year; foreign subscriptions, $4.20 a year; single copies, $1.25 each. THE MODERN SCHOOLMAN is indexed in the *Catholic Periodical Index*. Copyright, 1955, by THE MODERN SCHOOLMAN, Saint Louis, Missouri. Permission is required to reprint an article or part of an article.

Address all communications to The Editor *or* The Business Manager, THE MODERN SCHOOLMAN, 3700 West Pine Blvd., Saint Louis 8, Missouri. *Foreign subscription agencies:* ENGLAND: Duckett, 140 Strand, London, W.C.2; NETHERLANDS: Swets & Zeitlinger, Keizersgracht 471, Amsterdam; SPAIN: Anaquel Ediciones, Rios Rosas, 11–San Mateo, 21, Madrid.

Entered as second-class matter December 1, 1923, at the post office at Saint Louis, Missouri, under the Act of March 3, 1879. Acceptance for mailing at special rate of postage provided for in Section 1103, Act of October 3, 1917, authorized on January 15, 1929.

Printed in the U.S.A. by E. W. Stephens Co., Columbia, Missouri

THE MODERN

SCHOOLMAN

MARCH 1955

Complexity of Mathematical Logic 205
Maurice Meigne, S.J.

Eternal Matter and Form in Siger of Brabant 223
Lottie H. Kendzierski

Efficient Causation and the Categories 243
Arthur A. Vogel

The Causal Proposition—Principle or Conclusion? (*Con.*) 257
Joseph Owens, C.SS.R.

NOTES AND DISCUSSION

Fourth German Congress of Philosophy, Stuttgart, 1954 222
Walter Brugger, S.J.

Chronicle 270

NOTES ON FOREIGN BOOKS 271

BOOK REVIEWS

St. Thomas Aquinas, *The Division and Methods of the Sciences*, tr. by Armand Maurer, C.S.B.

William H. Kane, O.P., John D. Corcoran, O.P., Benedict H. Ashley, O.P., and Raymond J. Nogar, O.P. *Science in Synthesis* 282
Joseph F. Wulftange, S.J.

The Teaching of Philosophy: An International Enquiry of UNESCO .. 286
James Collins

Magda B. Arnold and John A. Gasson, S.J. *The Human Person*

Joseph Nuttin. *Tâche, réussite et échec* 288
Francis L. Harmon

John K. Ryan (Ed.) *Philosophical Studies in Honor of the Very Reverend Ignatius Smith*, O.P. 290
Vincent Edward Smith

Joseph Defever, S.J. *La preuve réelle de Dieu* 291
Joseph de Finance, S.J.

BIBLIOGRAPHY 294

Maurice Meigne, s.j.

COMPLEXITY OF MATHEMATICAL LOGIC

The Reverend Maurice Meigne, s.j., is professor of mathematics, physics, and symbolic logic at the Séminaire Missionnaire "Les Fontaines" par Chantilly. He has studied at the Ecole Polytechnique and the Ecole Nationale du Génie Maritime. He has previously written scientific and technical papers.
The article was received by The Modern Schoolman *on December 23, 1953, and was translated by Venant Cauchy, Ph. D., of Fordham University.*

I Kinds of Logic: Natural Logic

Since about the beginning of the century, the expression "mathematical logic" has frequently been used as a synonym for symbolic logic, for formalized logic, as soon as it contained some symbol having a mathematical origin. Whitehead and Russell in their imposing *Principia Mathematica* speak of "mathematical logic" with a facility born of the conviction that mathematical thought can be reduced to pure logic expressed in symbols.

This practice runs the risk of bringing about regrettable confusion not only in the minds of those who read works of logic but perhaps also in the minds of their authors. This confusion, though it was intentional in the authors of the *Principia*, who were disciples of Frege and Dedekind, is not always so in the others. Hence the necessity of clearly distinguishing several aspects of logic.

The logic of assertions treats of concepts, of judgments, of propositions, or of formulae endowed with a logical value, and also of reasonings recognized as valid. Thoughts, reasonings, and assertions may be considered in different ways. First, our logical activity may apply to acts of knowledge bearing on the universe of external experience. Our judgments, popular or scientific, take on a certain meaning and value in this universe. This can be called a physical logic. It is, in fact, a general theory of observation and experience. Such a logic will easily transform itself into a theory of physical and metaphysical realities in an atmosphere of realism, idealism, or phenomenalism.

According to F. Gonseth, traditional logic is a physical theory of the object.[1] It was joined historically to an ontological theory of substances (which are only subjects) and of essences (attributes or subjects), whose classification according to proximate genus and specific difference it regulated. Allied with it as well were theories of knowledge worked out in harmony with this ontology founded on grammatical realism.

Our mental activity may also be concerned exclusively with its own operations, its own legitimate efforts, thus abstracting from the meaning and value of the propositions in an external universe. Its valid reasonings, called proofs or demonstrations, are independent of any experimental verification; and in this sense they form a deductive logic. It is also called operative logic, as applied to the operations of the mind, and organic logic, destined to function as an instrument (*organon*) in the other disciplines.[2]

We shall deal with the latter because the mathematical sciences expect the certitude of their conclusions to depend solely on the functions of the mind and not on an experimental verification. It constitutes logic in the strict sense. We shall indicate three of its aspects.

In the first the intention is to describe and organize the connections and the probatory operations of the mind in effective arguments placed in a framework of thought relative to everyday life, to science, mathematics, history, law, medicine, the world of poetry, and so forth. Within each framework one may always suppose "existential" premises; that is, premises "existing" in the "world of thought" which one has in mind and which does not have to be the so-called real external world. This "existence" involves only the reality of our thoughts, self-consistent and coherent with the others. We shall call this natural logic. It stems from observations and reflections on a real mental activity. It may be called intuitive in the sense that the concepts and operations utilized have a meaning, an "interpretation," a content in the world considered, and in the sense that at least all the elementary arguments can be verified by direct intuition bearing on the meaning of the

[1] *Qu'est-ce que la logique?* (Paris: Hermann, 1937). Gonseth quotes H. Hahn of the Vienna Circle, who says that tautological statements say nothing about objects, and "n'ont rien à redouter du controle expérimental; ils sont donc certains et absolument valables" (chap. 3, p. 35).

[2] R. Poirier, *Logique et modalité* (Paris: Hermann, 1952), pp. 10-11.

[3] The *Logique* of A. Sesmat (Paris, Hermann), developed as a prolongation of traditional logic, is another example.

elements in question. Natural logic appears then as the study of the laws and structures of thought in those of its modes of connected reasoning which are recognized as valid.

Traditional logic, freed of its physical or metaphysical interpretations, belongs to this type. It is the formal logic of a real but simplified discourse, whose every term and judgment possesses a natural interpretation in a certain conceptual world of subjects and predicates.[3]

The unquestionable advantage of a natural logic consists in finding immediate application to certain operations of the mind, those operations which belong to a well-defined world of thoughts, on condition that we stay within the framework in and for which this logic was discovered. This condition, today a matter of course, has taken at least twenty centuries to gain recognition; it shows how little imagination and critical sense the human species manifests in some matters. Today it would be very naïve to believe that a logic taken from a mental experience limited to a certain "world of thoughts" is universally applicable to all our logical operations. This is a weakness of ancient as well as modern thought; and it is especially one of the inadequacies of Kant's philosophy, which gave an all too unconditional, universal, and necessary value to the categories tied in with a special logic which had, in his opinion, attained full perfection. As a result of the works accumulated during the past hundred years, the idea of a definitive logic, sufficient to all needs, cannot be entertained any more.

Mathematical logic is particularly opposed to whatever would restrict it to the narrow prison of the mental forms and the oversimplified structures of an analytical logic. But, whatever the limits of a natural logic may be, one cannot avoid beginning and ending with it. It is the alpha and omega of all logical thought and occupies a privileged place at the very foundation of this thought.

From this first aspect, logicians, following in the footsteps of Leibniz and mainly since the middle of the nineteenth century, with Boole and De Morgan, proceeded to translate natural logic into symbolic language. They express with the greatest possible exactness the terms (subjects, predicates), the connections (inclusion, inherence, implication), and the logical operations involved in arguments (the rules of deduction). This algebraized logic, which is the work of mathema-

ticians, corresponds to the passage from arithmetic to algebra, encouraged by the use of signs in arithmetical operations. For this reason Schröder called it "algebra of logic," or again one could term it "algebraic logic."

To the extent that the translation is exact or equivalent to the natural logic from which it stems, algebraic logic differs only in its graphic signs. In regard to applications, it shows the same advantages and limitations as the first.

In fact, one often finds differences between algebraic logic and a natural interpretation. For the sake of convenience, symmetry, and generality, one is led to alter the logical meaning of the connections and operations. The translation ceases to be true. It will be necessary to verify for each kind of application the fact that the modifications effected do not alter the conclusions, or it will be necessary to restrict the meaning and import of the symbols and operations in order to get back into the very conditions of natural logic. St. Zaremba had already noted[4] that traditional logic was falsely accused of containing errors. It always supposes its "existential premises," whereas the algebraized logics do not necessarily suppose them for general propositions; they introduce an empty class (or null class) which cannot be found in traditional logic. The error committed is one of interpretation or one which would result from confusing the "worlds of thoughts." This observation will take on still greater importance in a new aspect of logic.

A more or less faithful symbolic translation of a natural logic ceased to satisfy the logicians. Under the influence of essential problems relating to the foundations of mathematics, they were led to conceive logics in which the different symbols did not have any specific meaning, as D. Hilbert had conceived of geometry at the end of the last century in his "axiomatic method." This conception, pushed to extremes, results in purely formal logical or logico-mathematical systems. These are constructed by means of supposedly arbitrary principal formulae or propositions, from which valid conclusions are drawn through rules or figures of deduction that are in principle equally arbitrary though given in advance. These formal systems supply a

[4] *La logique mathématique* ("Mémorial des sciences mathématiques"; Paris: Gauthier-Villars, 1926), p. 27.

conventional logic or logico-mathematics. In these systems the symbols of concepts and logical connections, appearing in the formulae and in the logical operations on the formulae, cease to have any meaning. The logic develops entirely according to the action of the rules of deduction when applied to the initial formulae and to new formulae previously arrived at. Thus are constructed formal systems designated by the names of "logics," "calculi," "codes," "algebras," and sometimes "languages." We shall also call them "formal logics" or "formalized logics."

In fact, the logics which have been constructed are not completely arbitrary; their authors conceived of them with the intention of representing, at least in part, real theories. Like the preceding group, they contain generalizations bearing on the use of the symbols of connections (of implication, for example) or extend to an infinite range of elements. All these systems agree in that they are entirely determined in advance. They contain all their conclusions implicitly. This quality is stressed by the proponents of the systems to buttress the conviction that they achieve a faultless demonstrative rigor by completely eliminating from arguments and initial formulae any appeal to intuition, which they believe to be the cause of all failures.

Therefore, the formal systems—arbitrary in principle—do not necessarily represent a natural logical theory any more; that is, an indubitable mental experience in a certain area. They are not immediately applicable to effective or natural arguments, still less to external experience. It becomes necessary to find for them a more "concrete interpretation" in a natural logic by causing a concept, a connection, a logical operation to correspond to each symbol, so that the operations of deduction still correspond to one another. In other words, a certain natural logic, suitably expressed by symbols, must be applicable to formal logic, each element and operation of one corresponding to an element and operation of the other, and must retain its properties in this application. We shall say that the symbolized logic is isomorphic to the formal logic being considered.

The first difficulty encountered in a formal logic arises in its utilization. There are other more serious problems which endanger the very existence of the logic and which its first authors, belonging to the

school of Göttingen, have not underestimated. The nonintuitive character of the formal system provides no guarantee that the system resulting from the principal formulae applied according to the rules of deduction is not contradictory. As long as this consistency is not established, one is never sure of not reasoning in a contradictory system. Moreover, in the systems that make use of a classical logic which has an axiom or rule relating to the excluded third, the unconditional use of the axiom or the rule is not legitimate so long as a certain problem of decision has not been solved. Without a solution to the problems of consistency and decision, the vaunted rigor which constituted the main advantage of the enormous complication and weighting down of the demonstrative apparatus is reduced to nought.

These essential problems are in general very difficult to solve. Outside of a few very elementary systems, such as the logic of propositions and a few cases of the logic of predicates of the first order as well as finite arithmetic, the solutions proposed fall far short of affording complete satisfaction, despite the importance of the works and means employed for their solution.[5]

There remains a pedagogical and merely human difficulty. The exclusive use of the latter group of logics would give the impression that all the logical operations of the mind are uniformly conceived according to the mode of the formalized logics. Thus thought would be imprisoned in the mechanism of a mere interplay of combinations of given symbols, according to rules determined once and for all. This narrowing down, which the great logicians like Hilbert and his disciples repudiate, runs the risk for young minds in the adolescence of thought and enamored of this prodigious mechanics, of reducing the logical function of the mind to a combinative or calculative apparatus, a function which an electronic machine could accomplish much better and much more rapidly; it only leaves to the mind the wholly theoretical possibility of choosing among the myriads of combinations effected or of orienting at random the advance of the symbolic calculi.

To sum up: natural logic, algebraic logic, and formalized logic are the three main aspects which the deductive logic of the operations of the mind may take.

[5]These points are discussed in *The Existence of Formal Theories and the Foundation of Mathematics*, which is to be published.

This preamble makes it possible for us to give a first answer to the question "What is mathematical logic?" We see that it can take three forms. The first and the most necessary will be that of a natural logic. The translation of the first into appropriate symbolic language will yield an algebraic logic; finally, logicians may strive to construct more extensive formal systems with a view to encompassing, wholly or at least in part, various natural theories and, if possible, may strive to set up new systems from a purely formal point of view, on condition that the requirements of such an enterprise are acknowledged. It is not possible, therefore, to reduce mathematical logic to its last form. This would mean breaking it away from its sources and condemning it to an early sterility. At any rate, mathematical logic must not be encased in definitive structures; it must profit by the indefinite growth of our disciplines and of the thought which creates them.

In the first two forms, the procedure consists of descriptions or of more or less faithful translations which do not drain the resources of the model from which they start—the logical activity of the mind in the first instance, and natural logic in the second. All efforts at conceptualization and expression are always "abstract" in some way. The mind schematizes, simplifies, chooses, retaining only some aspects which are, rightly or wrongly, deemed essential. For example, in traditional logic, whose model is discourse expressed in popular language, judgment is reduced to a subject, an attribute, a single verb—the equivocal verb "to be"—and three quantifiers: one, some, and all. All the conditions and the concrete circumstances which situate judgment in its framework of thought and in its context in discourse have deliberately been disregarded. Thus the concrete structures of the mental activity are never completely represented. However, the abstract structures will often admit of many interpretations. They shall be termed polyvalent.

This observation enables us to guard against the opinion, still much too widely held, that universally applicable formal structures exist. In the nineteenth century, Hankel's principle of the permanence of formal laws was a mathematical expression of the belief in a system

of absolute and purely formal laws, a belief which was not confirmed either by the subsequent development of the discipline or by a more thorough examination.[6] This belief results from a confusion of the "concrete" structure with the "abstract" structures of a logical milieu; in other words, it stems from too abstract and superficial an approach to the facts of logic. We call this the illusion of the formal. As soon as we try to state somewhat precisely the structures of thought, we quickly realize that they are a function of the milieu itself, of the "objects of thought" by means of which they were conceived. Thus in the natural theories, the "beings" (concepts and mathematical relations) and the structures in which they may enter are relative to the theory; likewise in the formal systems, a concrete structure which is adequate is one with the theory in which it is expressed. There are as many adequate logical structures as there are formal systems. This is so because the logical structure of a system comprises not only all the rules of deduction of a theory but also all the axioms, postulates, or principal propositions which are posited at the outset. The very notion of "rule of deduction" does not have any absolute character, except for the fact that there must be one. In a definite system one may easily transform a rule into an axiom and inversely. The excluded third of propositions, for instance, may be written in the form of a rule (not–not–p; therefore p) or in the form of an axiom ([A or B] and [not–A or B] imply B). J. Herbrand has presented in his thesis a revealing example of the same theory equivalently defined by means of a single rule of deduction and five axioms or by means of four rules and a single axiom.[7]

The relative character of the opposition between rule and axiom forces us to introduce a combination of the two and call the supposed coherent complex consisting of the axioms and the rules of reasoning "logical structure" or again "axiomatic base." The logical structure or the axiomatic basis defines a formal system or characterizes a natural theory. The "logic" of a formal system is entirely contained in its structure, which the system develops, so that a logic adequate in relation to its object is intimately dependent on the theory which it or-

[6]See a work to be published on research relating to a logic of creative thought in mathematics.

[7]*Recherches sur la théorie de la démonstration,* ed. Varsovie (1930), pp. 13, 26-27.

[8]In the works referred to in nn. 5 and 6.

ganizes. A logic does not regulate just anything but only those "worlds of thoughts" which submit to the structure of this logic. A noted mathematician, H. Lebesgue, said jokingly at the end of a discussion that theoretical arithmetic "applies to reality when it applies"; in other words, we must be very careful in making applications. The same is true of a logical structure; it applies to a world of thought if the latter has the same or an equivalent logical structure. No doubt one will be able to discover partial structures which are common to many theories, like the logic of propositions in ordinary logic. However, the partial and abstract structures will be valid only for some classes of theories and not necessarily for every theory. Thus each "logic" possesses a domain of utilization and effectiveness. A mathematical logic is defined therefore by the logical structure of some mathematical theory.

III Logic and Mathematics

The works of the mathematical logicians since the time of Frege tend, consciously or otherwise, to identify pure logic with mathematical logic. Others inject the ordinary logic of propositions and predicates into the mathematical formal systems and make mathematical logic into an amplification of logical thought. The latter would be no more than a simplification of the former.

A deeper study of the natural theories as well as of the formal systems in mathematics has revealed to us the existence of fundamental differences between ordinary logical thought and mathematical thought.[8] Let us show briefly the originality of mathematical logic and its irreducibility to ordinary logic, which is also called pure logic. First of all, it is an error to believe that in a natural mathematical reasoning all the elements of development are given in advance; even though they are known from some other source, they only enter into the reasoning precisely when they are needed. In general, the manuals and treatises state the theorems before the demonstrations of them. The pedagogical advantage of this style of exposition is counterbalanced by the risk of misleading the logician. The precise enunciation of a theorem can be known only after its demonstration; it happens some-

times that different demonstrations yield different enunciations. Only during the demonstrative process do we think of appealing to this property, to that hypothesis, to this construction; and the conditions which assign precise limits to the validity or the bearing of the statements can only be discovered in the course of reasoning or at the end of it.

Considered universally and strictly, there are no theorems which would require demonstration; but the only theorems worthy of the name within a theory are demonstrated propositions. Any other statement is but a project, an intention, an expression of a wish for a theorem—a sketch which must be filled out and touched up when one finds a demonstration. Reasoning resembles the flow of a river which receives tributaries along its course; the river is fulfilled and gathers all its waters only at its mouth. Reality differs from the analogy in that the tributaries and confluents in reasoning are not known with certitude and precision; they are only glimpsed in a favorable case. The totality of a reasoning is only grasped in an intuition which does not appear in the expression of the reasoning. Demonstration is a creation.

It follows from this that reasoning is not a "set of propositions" which would imply a conclusion. The set does not exist prior to reasoning; moreover, the order of the propositions and their modes of concatenation are just as important as the propositions themselves. It would be preferable to speak of a "sequence of propositions" of which the last is the conclusion, according to the linear schema of discourse. However, this reference to discourse and to its linear figuration is quite crude. Since the discourse which expresses a reasoning is not univocal, it is better to speak with Hilbert of a "demonstrative pattern" whose lines represent the various operations. The pattern branches out at certain points to converge on other points where partial conclusions or the final conclusion is found.[9]

The demonstrative pattern is fully known only when the demonstration has been completed. Reasoning, therefore, does not have that static and analytic character which is ordinarily attributed to it by logicians, who have given themselves in advance all the essentials of

[9]A psychologist, Max Wertheimer, has also observed that a sequence of propositions does not represent the real process of demonstrative thought. "Many things have disappeared. That which was dynamic and living has been ignored" (*Productive Thinking* [New York: Harper & Bros., 1945], p. 70).

demonstration. It is essentially dynamic, a sustained effort in fruitful progress towards the conclusion. If reasoning is not restricted to verifying, by a process of analysis, a formula discovered by other means but rather establishes some new property, it presents itself to our minds as a dynamic synthesis, as a creation. Mathematicians do not limit themselves to solving problems formulated beforehand or to finding demonstrations for ready-made theorems. The noblest aspect of their activity consists in discovering new problems and new theorems.

The great novelty of the most authentic mathematical thought lies in its creativity. It possesses in the broadest sense of the word the synthetic character; its most characteristic logic is applied to a process of synthesis, whereas its analytic aspects are of secondary importance. The conclusion does not follow from a mere juxtaposition of concepts or of statements, or from elementary substitutions, but from a kind of "fusion," by means of constructions and creations, of the axioms, known theorems, hypotheses, and various conditions; that is, of all the "postulates" and conditions of reasoning introduced into the mental process at the opportune moment.

The synthetic character of mathematical reasoning had already been noted by Descartes, who contrasted it with the tautology of the syllogism, and by Kant and Poincaré, who inquired into the origin of its synthetic judgments which they conceived to be a purely a-priori one. This "fusion," which can also be compared to a chemical combination, brings forth new properties which are not the same as the sum or difference of old properties. We shall limit ourselves here to a few very simple examples taken from arithmetic. Number 17, sum of a square 9 and a cube 8, is itself a prime number without a nontrivial divisor. The "fusion" of the units generates new properties. Likewise the sum of two primary numbers $7 + 5 = 12$ results in a number possessing four nontrivial divisors; in the same conditions, the sum of two prime numbers 37 and 23 produces number 60, which has in itself ten nontrivial divisors.

The demonstration does not use data in general as absolutes, but all the concepts and propositions utilized are assimilated to the theory and are placed furthermore in a "concrete" situation in a more or less extensive framework of the theory. The latter is merely characterized

by its principal data but not entirely determined—it is constructed and made precise by means of the data, the properties already acquired, and its own successive creations. A theory is not a "set of propositions" any more than a demonstration is; this set does not exist a priori; it is slowly built up and never possesses more than a partial existence while the theory is being erected.

The deductions of pure logic, on the other hand, simply make explicit that which was implicit. They do not afford any new result which was not contained in the premises but only the certitude that it (the result) was already contained in them. We may say in this sense that pure logic is but a vast tautology in the Cartesian sense, or purely analytic in a Kantian sense. This character belongs to ancient logic just as much as to the modern logics which have made no progress in this respect.

The superior logic of the mind usually employed in mathematical thought does not consist of a series of codified operations which one would apply without modification or examination, blindly as it were; but it lies, for the inventor, in the power to create an original course of thought or, for the others, in the power to rediscover for oneself the sequence of operations according to the directions of the inventor. This logic of thought presupposes in its dynamism a development, choices (whose probability is often practically null), and creations; it introduces and harmoniously organizes the materials according to a complex pattern and directs the process to the end of a new synthesis. The plans of the logical edifice are never more than glimpsed at the beginning; partly unknown, they are only discovered in the course of construction.

Mathematical logic cannot therefore be reduced to syllogisms, as logicians believed until the nineteenth century, or to identities, to equivalences or static relations, or to purely analytic forms; but it finds its place in a creative dynamism. The true mathematical logic is the complex of the laws of this dynamism which encase and structure a demonstrative thought actually in possession of its goal, without being a logic of creation itself which seems to transcend all rules.[10]

The finished reasoning will no doubt be re-examined and dealt with in an analytic spirit; the mind will give itself in advance all the general

[10]See the work, to be published, *Logic of Creative Thought in Mathematics.*

[11]*Ibid.*

propositions, the original methods, and demonstrative processes in order to work out an analytic deduction. The analytic re-examination of reasonings can be useful in effecting certain verification, but it only makes use of an inferior and (on the whole) rather superficial logic. Up to the present, logicians are only concerned with this shadow, with these traces of reasoning imprinted in verbal or symbolic discourse. They have labored like anatomists on the cadavers and skeletons of thought.[11]

The opposition between the analytic and synthetic characters of the two logics already establishes a profound difference between them. We will show that mathematical logic cannot reduce to a logical atomism. This fact establishes another fundamental difference between the two logics. A purely logical theory is based on the hypothesis that a group of elementary propositions (or logical functions: A(x), B(x, y, z) . . .) exists independent of one another. The logic of propositions, for example, situated at the basis of the modern logics, is but a very elementary method of combining such propositions according to the operations of negation, conjunction, disjunction, implication, and equivalence. It presupposes a "universe of propositions"—which are little absolutes—independent of one another, endowed with a logical value (true or false), and invariable despite any operation to which it may be subjected and in any given logic. The constancy of the logical properties is not in any way affected by the nature and number of the axioms and the rules of deduction which constitute the logic. These simple, permanent, and universal characteristics of propositions could appeal to the ancient philosophers; but they have become one of the causes of the inadequacy of their systems, owing to the lack of flexibility and the difficulty of applications.

It is with reason that these absolutes have been called atoms; so that pure logic rightly corresponds to a logical atomism. In the "general universe of propositions," atomism authorizes unexpected but true logical combinations. Thus the proposition "p and q" may mean: "7 divides 91" and "silver, at normal pressure, melts at 960 degrees centigrade." The generalized (or formal) implication "p implies q" may signify the following: "It is raining today in New York" implies "The Turks took Constantinople in 1453," an implication which remains

true whether or not it is raining today in New York. The general universe of propositions, which calls to mind De Morgan's "universe of discourse," does not appear to be a very rational universe; it would be better to break it up into more coherent "worlds." One may well inquire at times whether the advantage derived from certain generalizations would not amount to illusion or facetiousness.

Another peculiarity of pure logic in the algebraic or formal logics consists in starting out with principal formulas made up of symbols of propositions and of symbols of connection, which are "logical identities"—true whatever the logical value of the propositions which comprise them may be. Pure logic is entirely composed of such formulae.

In our mathematical theories or formal systems, on the contrary, logical atomism does not have any general application. We do not suppose that a universe of absolute true or false propositions is given in advance; but we assume in each theory a practically finite and rather small number of initial propositions, which are considered valid and from which all others will flow. The propositions taken all together are not independent. In the theory, the distinction between principal propositions (axioms or postulates) and the demonstrated propositions or theorems is entirely relative to the theory. It is well known that a proposition may be chosen as an axiom and make another axiom demonstrable. Moreover, it is not necessary for a mathematical statement to have absolute and invariable logical determinations (logical value, extension of the variables); they are essentially relative to the theory in which the statement may be expressed. It is also possible for a statement not to have any place in the theory if it is inexpressible or undecidable in the theory or if it is incompatible with the others.

The statements of propositions which may enter into various theories undergo some modifications most of the time, some variations in their logical determinations. The statements are generalized or specialized or subjected to different conditions; and the bearing of the statement, or the domain made up of the fields of its variables, usually varies from one theory to another. The proposition must adapt itself to the theory. The same is true of concepts.

Finally, mathematical theories or systems do not begin with "iden-

[12]Herbrand, *Recherches sur la théorie de la démonstration*, pp. 13, 26-27; G. Gentzen, "Untersuchungen über das logische Schliessen," *Mathematische Zeitschrift*, XXXIX (1934), 184.

tically true" formulae, as was pointed out by J. Herbrand and G. Gentzen,[12] but with "propositions" accepted as valid in the theory. The theory or system is made up not of master "formulae" but of propositions supplied with the precise conditions in which they are valid. There is no place in mathematics for vague, inexact propositions.

Thus propositions and concepts have ceased to be immutable absolutes, usable always and everywhere without modification in spite of the diversity of theoretical environments and of conditions. A proposition could claim "universality" only if it could adapt to all possible theories. Its very adaptation would destroy the ancient conception of universality.

To sum up, the difference between the conceptions of pure logic and those of mathematical logic arises, on the one hand, from supposing that an arbitrary group of elementary propositions is given which are absolute and immutable in all their logical properties, independent of one another, and also from seeking favorable combinations of symbols and propositions, formulae called "identities" of which logic shall consist; on the other hand, certain propositions declared "true" or "valid," whatever may be their origin (which we shall not investigate here), are assumed with much latitude, and one proposes to discover other propositions, demonstrable from the former by means of mental or formal processes recognized as legitimate. The mathematical propositions of a single theory depend on one another, in all their determinations, when the theory is able to assimilate them. They have a precise existence and precise determinations in the theory which constitutes a developing world of thoughts and propositions which are perfectly coherent. Outside of this propositional world, it is not possible, before examination, to affirm anything with certitude about any proposition. Each proposition must be confronted with each new theory, in which it will become precise and will be able to receive new logical determinations. A mathematical proposition ceases to be an atom, immutable and independent of the surrounding environment, a little logical god; under threat of extinction it must necessarily communicate with others and adapt at all cost to a theoretical world.

After these remarks, it is understandable that one should refuse to apply blindly the results obtained in pure logic to the mathematical

systems. The theorems of logic, which suppose the existence of propositions having invariable determinations, can only be put to use within the same theory assumed to be existent—at least consistent—in which these conditions are fulfilled. One must note that the introduction of the logical formulae into a mathematical formal system results in making these formulae relative to the theory by subjecting them to the limits and conditions of the theory. Hilbert intended to do this when he decided to formalize logic and mathematics simultaneously. Before that time he used to formalize only the mathematical concepts and relations, leaving "logic" in an absolute, undefined, and uncontrollable position.

As we have stated above, in a mathematical theory the separation between the "logical" and the "mathematical" is without foundation and cannot be determined with certitude. The axiomatic base, a complex of the "axioms" and the rules, defines the theory and forms at the same time as its initial logical structure. Each theory constitutes, however, a developing "world of propositions" in which ordinary logic cannot operate. More generally this logic could function validly in a "universe of propositions" consisting of a grouping of propositions from many worlds and of their negations, on condition that propositions which are not rigorously identical in all their determinations are considered to be different. We should also see to it that the same propositions are not simultaneously true and false and that the universes constructed are not contradictory. These reservations illustrate how difficult it is to form a "universe of propositions" and, a fortiori, the "general universe of propositions," which seems to belong to the code of the republic of Utopia.

The possibility of using pure logic in one or more carefully chosen theories could give us a false idea of our theories, if we wished to characterize them simply as "sets of propositions" reminiscent of ancient atomism. A theory or a formal system of mathematics is a "system of propositions dependent on one another." The "relativization" of the concepts and propositions to the theory is one of the great contributions of mathematical thought. The original absolute, placed in the concept, had already passed to the proposition in the modern logics; it rises from the proposition to the theory in mathematical logic. The mathematical absolute inheres in the theory itself; it causes the multitude of little absolutes—concepts or propositions—to disappear in favor of a

number of theories which we attempt to reduce. The ideal of mathematical thought would be a supertheory, the only absolute. In the supertheory there would only be one extremely complex logic. The logical unification, which would encompass mathematics, cannot result from an impoverishing abstraction but from a constant improvement of logic in more and more complex structures. We may consider the logic of propositions (classical, intuitionist, or minimal) as the common basis of all ordinary logical systems; it is not on this road of poverty that we must seek a solution to the problems of unity posed by logical thought in mathematics.

[*To be continued*]

Fourth German Congress of Philosophy, Stuttgart, 1954.

WALTER BRUGGER, S.J., *Berchmanskolleg, Pullach bei München*

About two hundred persons gathered for the fourth congress of the Allgemeinen Gesellschaft für Philosophie in Deutschland, which was held from September 25 to 30, 1954. Present were not only Germans but also representatives of foreign countries. The congress was under the direction of Aloys Wenzl. Its high points were the celebrations in honor of the hundred-and-fiftieth anniversary of Kant and the hundredth of Schelling. The commemorative address in honor of Kant, "Kant in the Twentieth Century," was given by Julius Ebbinghaus. Recognizing the present widespread rejection of Kant, Ebbinghaus opposed the neo-Kantian reduction of Kant to a mere philosophy of science and a theory of experience, and referred to the fundamental theses of speculative and practical philosophy, which, he maintained, were unshaken by the difficulties of modern mathematics, physics, and theories of law and right.

The commemorative address for Schelling was given by Paul Tillich, "Schelling and the Beginning of the Existentialist Protest." He showed that the existentialist correction of pure essentialist thinking lay deep in Schelling's thought, long antedating Kierkegaard. Besides other papers concerned with Kant and Schelling, there were a number on the problem of reality. They are to be published either in whole or in summary form.

The honorary president of the congress, Eduard Spranger, gave the closing address. Taking his cue from Kant and Schelling—of whom one has worked out especially the phenomenon of science, the other that of religion—Spranger remarked that we can no longer speak of philosophy where there is no more method or no reference to ultimate being and ultimate meaning. Theology and philosophy have engaged in a surprising exchange of frontiers, inasmuch as a certain theology speaks of "unmythologizing" and thus robs religion of its language, whereas some philosophers cultivate the myth, which is, it is true, an object of philosophical reflection but is not suitable to philosophy. The development of a new speculative philosophy should not be in the direction of proximity to occult science.

Philosophy, Spranger maintains, has a double visage. On the one hand, it is a philosophy of catastrophe. The thought of progress is dead. The interest of philosophy is restricted to man. Philosophy becomes anthropology and the philosophy of existence. Even humanism has become questionable. Man has seen himself as a deprivation. There is talk of a philosophy of guilt and of conscience. Kierkegaard, whose influence has not yet ceased,

(Continued on page 242)

Lottie H. Kendzierski

ETERNAL MATTER AND FORM IN SIGER OF BRABANT

Dr. Lottie H. Kendzierski is assistant professor of philosophy at Marquette University. She received her M. A. from Marquette University and her Ph. D. from Fordham University. She has previously written for THE MODERN SCHOOLMAN.

For Siger of Brabant, Aristotle is The Philosopher,[1] and he prefers the solutions of Aristotle to those of any other.[2] Siger considers his writings to be a restoration of Aristotelianism; and since he used Averroes' commentaries on Aristotle, his own interpretation of Aristotle is colored with Averroes' commentaries.[3] Thus, Aristotle and Averroes are the outstanding influences on Siger, but his doctrine also contains principles derived from the philosophy of Avicenna and Proclus.[4]

The principal works of Siger of Brabant are[5] *De Anima Intellectiva, De Necessitate et Contingentia Causarum, Quaestio utrum Haec Sit Vera: Homo Est Animal Nullo Homine Existente,*[6] *In Libros Tres de Anima, In de Generatione et Corruptione,*[7] *Impossibilia,*[8] *De Aeternitate Mundi,*[9] and commentaries on Aristotle's *Physics*[10] and *Metaphysics.*[11]

Siger follows Avicenna in holding the eternity of all intelligible realities. The First Cause produces immediately and necessarily a first intelligence which is coeternal with it. This is the only immediate effect of the First Cause:

> Causa prima totius esse est causa primae intelligentiae per se immediata, necessaria, et qua posita, simul et ponetur haec intelligentis, quae est causatum ejus primum . . .[12]

The First Cause is the cause of many effects only according to a certain order; the only immediate effect of the First Cause is an effect which is itself necessary and yet a unity.[13] The immediate effect of God must be a perfect creature; therefore, matter or that which is made from nothing cannot be produced immediately by the First Being.[14] So, too, the human species which is made by God through

generation cannot directly proceed from Him.[15]

The creation of all beings other than the immediate effect of the First Cause is by way of intermediaries which, though not immediate, are nevertheless eternal effects of the First Cause. Between the First Cause and the world there is an infinite number of intelligences[16] which

[1]In the *De Anima Intellectiva* Siger accuses St. Albert and St. Thomas of misinterpreting Arisotle's thought: "Isti [St. Albert and St. Thomas] viri deficiunt ab intentione Philosophi, nec intentum determinant" (p. 152).

[2]F. Van Steenberghen, *Les oeuvres et la doctrine de Siger de Brabant* (Bruxelles: Palais des Académies, 1938), pp. 167-68. Cf. F. Sassen, "Siger de Brabant et la doctrine de la double vérité," *Revue néoscolastique de philosophie,* XXXIII (1931), 178.

[3]Siger is true to Averroes when he places the theologians on the side of the poets because both admit the doctrine of creation: "Quod si tota universitas entium causatorum aliquando fuit non ens, sicut voluerunt aliqui poetae, theologi et aliqui naturales" (*De Aeternitate Mundi,* III, 41-42).

[4]P. Mandonnet, *Siger de Brabant et l'averroisme latin du XIIIe siècle* (2e éd.; "Les philosophes belges," Vol. VI [Louvain, 1911]), I, 112. Siger read the *Liber de Causis,* which he considered to be purely Aristotelian.

[5]For a chronology of the works of Siger, cf. F. Van Steenberghen, *Les oeuvres et la doctrine de Siger de Brabant,* pp. 82-83; and see p. 10 for a summary of the discovery of the works of Siger. Cf. also M. Grabmann, *Neuaufgefundene Werke des Siger von Brabant und Boetius von Dacien, Sitzungsberichte der Bayerischen Akademie der Wissenschaften,* Philos. Klasse (1924), 2; *Neuaufgefundene "Quaestionem" Sigers von Brabant zu den Werken des Aristoteles, Miscellanea Fr. Ehrle* (Rome, 1924), Vol. I.

[6]These works are found in Mandonnet, *Siger de Brabant et l'averroisme de XIIIe siècle* ("Les philosophes belges," Vol. VII), Vol. II.

[7]For these works of Siger, see F. Van Steenberghen, *Siger de Brabant d'après ses oeuvres inédites;* I. *Les oeuvres inédites* ("Les philosophes belges," Vol. XII [Louvain, 1931]).

[8]See C. Bauemker, *Die Impossibilia des Siger von Brabant, Beiträge zur Geschichte der Philosophie und Theologie des Mittelalters,* II, VI (Münster, 1898), pp. 1-200.

[9]The critical edition of this text is W. J. Dwyer, *L'Opuscule de Siger de Brabant "De Aeternitate Mundi"* (Louvain, 1931).

[10]P. Delhaye, *Siger de Brabant, questions sur la physique d'Aristote* ("Les philosophes belges," Vol. XV [Louvain, 1941]). Cf. p. 6, where the editor indicates that this text is a report of a student of Siger. This is confirmed by the testimony of Grabmann and Van Steenberghen.

[11]C. A. Graiff, *Siger de Brabant, questions sur la métaphysique* ("Philosophes médiévaux," Vol. I [Louvain, 1948]). Cf. p. xiv. This text is also considered by Grabmann and Van Steenberghen to be the notes of a student and not the personal writing of Siger. Cf. also p. xxv. The *Metaphysics* was written in 1272, and Siger already knew St. Thomas's commentary on the *Metaphysics.*

[12]*De Nec. et Cont. Causarum,* ed. Mandonnet, p. 111. Cf.: ". . . quod a Primo non procedat nisi unum immediate" (*In Metaphys.,* V, 11, ed. Graiff, p. 302); ". . . effectus talis causae debet esse sempiternus . . ." (*ibid.,* III, 16, p. 142).

[13]"Causa prima non est causa praedictorum [effectuum] nisi secundum quemdam ordinem, et non omnium immediate, et non multa nisi quodam ordine" (*De Nec. et Cont. Causarum,* ed. Mandonnet, p. 112).

[14]". . . effectus immediatus Primi est unum tantum et non est materia . . ." (*In Metaphys.,* V, 11, ed. Graiff, p. 302). ". . . Deus non est causa omnium entium in genere materiae" (*Impossibilia,* I, ed. Bauemker, p. 76). What is composed of nonbeing cannot proceed immediately from the First Cause—"ad secundum, cum dicitur

are necessary and eternal by their nature, but their capacity to be is derived from the First Cause; therefore, they do not exist as self-produced.[17] Each intelligence is a movent of a celestial sphere and is unique in species, since multiplicity within a species would require matter. Each of these is in its very being separate from matter and therefore is not multiplied according to the multiplication of matter.[18]

The celestial spheres, in turn, exercise by their movement a permanent and essential influence on the infralunary world; they conserve terrestrial bodies and assure the perpetuity of species and generation.[19] Thus, matter and all things subject to generation proceed from the First Being through the intermediary of the celestial spheres.[20]

---

quod illud quod fit ex non ente, fit immediate a Primo, dicendum quod non est verum; secundum enim intentionem auctoris libri de Causis" (*In Phys.*, I, 37, ed. Delhaye, p. 75).

[15]"Species humana facta est per generationem a Deo, sequitur eam non immediate processisse" (*De Aet. Mundi*, I, ed. Dwyer, p. 28).

[16]"Intellectus infiniti separati sunt et existenti in actu" (M. Grabmann, *Neuaufgefundene "Quaestionem" Siger von Brabant zu den Werken des Aristoteles*, p. 118). Siger is probably borrowing from Proclus's doctrine when he says that an infinite number of intelligences exist between the First Cause and the world.

[17]If one supposes that a being distinct from God is eternal, that does not mean that it is uncaused. "Dicendum quod supposito quod aliud a Primo sit sempiternum, hoc non videtur tollere quod sit causatum secundum viam rationis humanae" (Siger, *In Metaphys.*, II, 8, ed. Graiff, p. 48). A being can exist eternally and can be caused, since movement itself is eternal. ". . . quamvis aliquid sit sempiternum et fiat innovatio in ipso, hoc non tollit quin sit causata: sicut patet in motu, quod in ipso est innovatio et est nihilominus sempiternus; sed in sempiternis nihil est ibi innovationis" (*ibid.*, III, 7, p. 94).

[18]"Natura quae in esse suo separata est a materia, non multiplicatur multiplicatione materiae. . . . Omnia ergo forma per se subsistens, non habens esse materiale, de sui ratione est individuata; et cum nihil individuatum possit esse commune pluribus, nulla forma liberatum esse habens a materia potest esse communis pluribus individuis; ita quod secundum hoc, in qualibet specie separatarum intelligentiarum a materia, non est nisi unica numero intelligentia in quo est consenserunt omnes philosophi" (*De Anima Intellectiva*, VII, ed. Mandonnet, p. 168).

[19]". . . sed entia generabilia conservantur in esse et secundum speciem mediante orbe . . ." (*In Phys.*, I, 37, ed. Delhaye, p. 74). Cf. *In de Gen. et Corrup.*, I, 11, ed. Steenberghen, pp. 271-72. The incorruptibility of the world is assured by the perpetual movement of celestial bodies and by the inferior species which remain with the succession of corruptible individuals. Cf. also *In Phys.*, VIII, 26, ed. Delhaye, p. 235: "Dicendum quod ad unitatem motus, continuitatem et sempiternitatem exigitur unitas et sempiternitas motoris et etiam mobilis: quia enim movens movet per virtutem aliquam et mobile movetur per virtutem aliquam, permanentia istarum virtutum in eadem dispositione causat continuitatem motus."

[20]In intermediary causality, the inferior causes and movements are subordinated to superior causes and movements. ". . .

Since matter is the immediate effect of the celestial spheres and since the spheres are eternal, matter too is eternal.[21] Matter is not engendered,[22] since generation presupposes matter; but it is created by the intermediary of the celestial spheres.[23] Matter is the permanent subject of generation,[24] and the form alone is acquired by generation; the composite is engendered in virtue of its form.[25] There is no possible

---

quia in eis quae essentialiter ordinantur secundum totum, semper superius habet aliquam causalitatem super inferius; nunc autem corpora superiori sic sunt ordinata respectu inferiorum; quare manifestum est quod generabilia et corruptibilia procedunt a Primo mediante orbe. . . . Et hoc est quod dicunt Algazel et Avicenna et omnes Peripatetici quod inferiora ordinantur et reguntur a superioribus, et hic quidem Theologi . . . et etiam Procli, multa producuntur ex non ente, quae tamen non producuntur immediate a Primo, ut anima producitur mediante intelligentia et intelligentia inferior mediante intelligentia superiori, et tamen manifestum est quod ex non ente producuntur" (*In Phys.*, I, 37, ed. Delhaye, pp. 74-75). Cf. *In de Gen. et Corrup.*, II, 9, ed. Steenberghen, p. 287. Inferior causes are immutable, but not perpetual; intelligences are perpetual but not changeable; celestial spheres are at once perpetual in their existence and changeable in their revolutions. They are, therefore, the cause of generation when they are near to the earth and of corruption when they are away from the earth.

[21]"Et dicendum quod orbis sic agit et tantum sic cum agit generando; sic autem non est causa materiae, sed per naturam sempiternam essentiae quintae: et ideo ipsa materia est sempiterna" (*In Metaphys.*, V, 11, ed. Graiff, p. 304). Cf. *De Aet. Mundi*, III, ed. Dwyer, p. 45: "Ad primum ergo dicendum quod ens in potentia non est sempiternum, nisi cum accipitur ut in prima materia."

[22]*In Metaphys.*, VII, 8, ed. Graiff, p. 373. Matter itself does not become *per se*.

[23]Matter is not engendered and is not corruptible, but it has been produced "quantum ad suam essentiam, cum non sit Prima Causa" (*ibid.*, V, 10, pp. 300-301). Matter is not the immediate effect of the First Cause, since the immediate effect of the First Cause is one and is the efficient cause of all other beings: "et iterum, nec Primum Movens est causa immediata materiae, quoniam secundum intentionem Aristotelis et Avicennae effectus Primi immediatus est unus tantum: idem enim manens idem, semper est natum facere idem, ut dicitur in II De Generatione, et illum effectum oportet esse similem Causae Primae" (*ibid.*, p. 301). Cf. also *In Phys.*, I, 38, ed. Delhaye, p. 74. Matter proceeds from the First Being by the intermediary of the celestial spheres: ". . . mediante eo procedunt entia a Primo, mediante quo conservantur in esse; sed entia generabilia conservantur in esse et secundum speciem mediante orbe . . ."

[24]*In Metaphys.*, III, 15, ed. Graiff, p. 135. Matter is the cause of generation, for from nonbeing nothing can be generated.

[25]*Ibid.*, p. 136. When it is said that matter is not generated, it must be understood that matter is not eternal except in sensible things nor is it separated from them. So, too, form cannot be made from anything, for then it would be made *per se* and would be composed of matter and form. Cf. *ibid.*, 16, p. 150. The intrinsic principles such as matter and form are corruptible *per accidens*, not *per se*. For matter is corrupted *per accidens* according to what is under whiteness, because that which is in matter is corrupted; whence matter is corrupted *per accidens* through form and privation, but its substance is not corrupted *per se* nor *per accidens*. Form is not corrupted *per se* because it is not generated *per se;* if it were thus, then something would pertain to the essence of form which would change to *esse*, and the same applies to the next form, and thus generation would not have a term. Whence we must understand that the

production outside of generation; the world cannot be engendered from pre-existing matter, for matter cannot exist without form and nothing material pre-exists before the world.[26] Matter alone is formally in potency to the form of the engendered being; therefore, the subject of generation can be or not be. It is being by the matter which is in it and nonbeing by the privation of the form engendered. Thus the engendered being is produced from being in potency, "ex non ente simpliciter, non ente in actu, ente tamen in potentia."[27] Thus the essence of matter is not its potentiality but rather its potentiality to all forms.[28] Matter, therefore, never exists without form; and forms, in turn, have their whole existence as actualizations of the potency of matter.[29] In itself, matter has neither diversity nor unity[30] but is one of several powers. It can be a principle of infinite quantity and can

---

substance of form is not corrupted except *per accidens;* but the substance of matter is neither corrupted *per se* nor *per accidens.* In like manner, if form were corrupted *per se,* then something of it would change to *nonesse,* and so on to infinity. But we must understand that the effective principle is not corruptible, nor are the intrinsic principles corruptible as to their substance; because of which, generation is eternal. On this point, cf. also *ibid.,* VII, 7, p. 372, and *In de Gen. et Corrup.,* I, 16, ed. Steenberghen p. 273.

[26]Siger, *In de Gen. et Corrup.,* I, 15, ed. Steenberghen, p. 273.

[27]*Ibid.,* 20, p. 274.

[28]*Ibid.,* 21, p. 275. Cf. *ibid.,* II, 9, p. 287. Generation presupposes a subject capable of receiving an engendered form but actually deprived of this form. On the other hand, form and privation being incompatible in the same portion of matter, the agent cannot produce a new form without destroying the privation of this form; and as in matter the privation of a contrary is inseparable from the other contrary, the corruption of the privation carries with it the corruption of another contrary. Thus all generation implies the corruption of a privation and consequently the corruption of a form contrary to the new form. In this way, all being is engendered from a pre-existing being which is transformed, and thus nothing can be corrupted without something being engendered in its place. On this point, cf. Averroes, *In XII Metaphys.,* com. 18 (Venice: Juntas, 1550-52) Vol. VIII, fol. 143r. Matter is moved and changed until that which is in potency becomes a form in act.

[29]*In de Gen. et Corrup.,* I, 52, ed. Steenberghen, p. 283. Matter is the subject of all transformation which requires a fixed subject. Cf. *ibid.,* I, 6, p. 270: "Ad istam tria intelligenda sunt: unum est quod materia est causa corruptionis; secundum, quod corruptio unius est generatio alterius; tertium est quod, quantum est ex parte materiae, quod generatio est aeterna." All forms which are in the first mover are in potency in prime matter (*In Metaphys.,* II, 12, ed. Graiff, pp. 61-62). On this point, cf. Averroes, *In XII Metaphys.,* com. 18, Vol. VIII, fol. 143v: ". . . omnes proportiones et formae sunt in potentia in prima materia."

[30]". . . materia secundum se accepta non est una numero in actu, nec specie, nec genere, nec similiter plura aliquo modo, quoniam unum in actu non est aliquid nisi per formam . . ." (*In Phys.,* I, 38, ed. Delhaye, p. 76).

receive an infinite number of successive forms which are not specifically distinct, for the number of species is finite.[31]

Having established the eternity of movement in this world upon the eternity of the Prime Mover and the intermediate movers,[32] Siger argues that the eternity of time follows the eternity of movement, for time is the measure of movement.[33] Time is composed of things finite in quantity which are infinite in number. Though every second is

[31] *Ibid.*, 40, p. 80. Matter is not in potency to an infinity of forms which it possesses at the same time. It is not in potency to an infinity of successive forms specifically distinct but is in potency to an infinity of successive forms numerically distinct. ". . . differentiae substantiales rerum omnium finitae sunt; istae autem sumuntur ex forma . . . materia transmutatur de una forma ad aliam secundum numerum et ex illa ad aliam, et sic in infinitum circulando, secundum intentionem Aristotelis." Subsistent material species or forms are of limited number but are realized in a plurality of numerically distinct individuals.

[32] *Ibid.*, VIII, 23, p. 227. In effect, all movement can be reduced to an eternal mover by intermediaries. Cf. *ibid.*, 8, p. 204. Motion results from the emanation from the First Mover and can be corrupted by its separation from the First Mover. "Et ideo, sicut nos ponimus esse factum per emanationem eius a primo, ita per remotionem eius a primo possumus ponere ipsum esse corruptum aliquando."

[33] "Et ideo [si dicamus] motum incepisse aliquando . . . similiter dicemus esse de tempore; si autem sequamur Aristotelem ponentem motum esse aeternum, similiter necesse erit ponere quod tempus sit aeternum" (*ibid.*, 9, pp. 205-6).

[34] *De Aet. Mundi*, I, ed. Dwyer, pp. 31-32: ". . . huius autem rationis dissolutio apud Aristotelem est quod licet quodlibet tunc sit finitum, quia tamen in tempore est accipere tunc ante tunc in infinitum, ideo non totum tempus praeteritum est finitum. Compositum enim ex finitis quantitate, numero tamen infinitis, infinitum habet esse." Just as time has to be through a certain then, so too species has to be through the existence of one of its individuals: "Et est simile, quia sicut tempus praeteritum habet esse per quodcumque tunc, sic et species per esse cuiuscumque individui." Cf. *In Phys.*, VIII, 10, ed. Delhaye, p. 207, where Siger shows that for Averroes the instant is necessarily the term of the past and the beginning of the future, for the instant is an element of time and time has being in succession and becoming. On the same point, cf. St. Thomas Aquinas, *In VIII Phys.*, lect. 12, no. 13, where St. Thomas interprets Aristotle's notion of time in much the same way as Siger does: "Videtur ergo Aristoteles in assumptione huius medii supponere sempiternitatem temporis, quam debet probare, Averroes autem volens solvare Aristotelis rationem, dicit quod hoc quod nunc semper sit principium et finis, convenit ei inquantum tempus non est stans sicut linea, sed fluens." Cf. also *ibid.*, no. 14: "Et ideo aliter dicendum est, secundum intentionem Aristotelis, quod hoc quod omne nunc sit principium et finis, vult accipere ex eo quod primo supposuit, scilicet quod prius et posterius non sit, tempore non existente . . ."

[35] "Necesse est tamen ponere motum non semper fuisse, sed aliquando incepisse, et quamvis demonstrationem ad hoc non possimus adducere" (*In Phys.*, VIII, 6, ed. Delhaye, p. 200). According to faith, one must necessarily hold that the world and motion were created. "Secundum fidem mundus novus est et motus est nova. Dico ergo secundum fidem quod mundus non est aeternus, et motus est novus; similiter et alteratio est nova, similiter et generatio" (*In de Gen. et Corrup.*, II, 12, ed. Steenberghen, pp. 288-89). Siger states that the effect of God is eternal and this can be demonstrated; but, he concludes, this is possible, not necessary, for we do not

finite, in time there is a then before the then to infinity, for what is composed of things finite in quantity yet infinite in number has to be something infinite.[34] Siger is aware that the eternity of movement and time raises a difficulty with regard to faith and concludes that it is necessary to hold that motion is not eternal; but this cannot be proved by demonstration.[35] In fact, Siger even insists that Aristotle proves that motion is eternal:

> Aristotle, however, as is clear, proves motion to be eternal; this is clear from the reasons which he gives. Some, however, who wish to bring Aristotle's intention in accord with the faith say that Aristotle did not think because of these reasons that the world was eternal, and that he did not hold these demonstrative conclusions to be true of necessity but advanced these reasons only because of doubt, and no other reason. But this is clearly false, since then it would follow that Aristotle was in doubt in the greater part of his philosophy, and more so where he speaks of separate substances: for from the eternity of motion he proves that there are separate substances . . . Wherefore, it must be said that in the opinion of Aristotle the world was eternal, so that it never began nor will it ever end. This is what the Peripatetics who are of his sect posit with many proofs. One of which is that, One in so far as it is One can only produce one; and even if it does produce heat in something, this is not *per se* but *per accidens.*[36]

No doubt Siger is thinking of St. Thomas in the texts just cited. St. Thomas is convinced that Aristotle's arguments from motion are not

---

know the proper actions of God. We judge them according to sensible natures; that God is eternal and His effect is not is extraordinary, though not impossible. ". . . hoc est mirabile, scilicet quod effectus possit esse sine causa, non tamen impossibile. Licet tunc causa habeat unde sit causa ab aeterno, mirabile est quod effectus non sit ab aeterno, non tamen impossibile" (*In Metaphys.*, III, 19, ed. Graiff, pp. 155-56).

[34] *In Phys.*, VIII, 6, ed. Delhaye, p. 199. Cf. *In Metaphys.*, III, ed. Graiff, 16, pp. 145-46. Aristotle says that God made a perfect generation so that for the perpetuity of the species there may be continual generation. Whence, though the opposite of this be held by faith, even if it cannot be proved by demonstration and even if the proofs of Aristotle are an impediment, it does not seem that this can satisfy the human intellect. Aristotle says with justice that the knowledge of truth is freedom from doubt; whence, that someone should know the truth and not be able to solve the reasons which oppose it does not seem possible.

demonstrations in proving the eternity of the world, for Aristotle himself says that there are certain dialectical problems which reason cannot prove, as whether the world is eternal or not.[37] St. Thomas states that Aristotle did not intend to prove the eternity of the world and that all he proves is that all motion requires a movable subject[38]—which is not contrary to faith.[39] Aristotle's arguments, therefore, are valid against those who admitted the existence of eternally movable things but denied the eternity of motion; namely, Anaxagoras and Empedocles.[40] St. Thomas concludes that Aristotle's arguments on the

[37]St. Thomas, *Summa Theol.*, I, q. 46, a. 1, resp. Cf. *In II Sent.*, d. 1, q. 1, a. 5, sol.; *In XII Metaphys.*, lect. 5, no. 2497; *De Pot.*, q. 3, a. 17.

[38]"Et quia omnis motus indiget subiecto, ut hic Aristoteles probat et rei veritas habet . . ." (*In VIII Phys.*, lect. 2, no. 4).

[39]"Patet ergo quod hoc quod Aristoteles hic probat, quod omnis motus indiget subiecto mobili, non est contra sententiam nostrae fidei . . ." (*ibid.*).

[40]"Unde patet quod haec ratio, quam ponit Aristoteles in VIII Phys., procedit contra eos qui ponebant mobilia aeterna, sed motum non aeternum, ut patet ex opinionibus Anaxagorae et Empedoclis" (St. Thomas, *Summa Theol.*, I, q. 46, a. 1 ad 5). Cf. *ibid.*, a. 1, resp. Aristotle's reasons in the eighth book of the *Physics* are not simply but relatively demonstrative to contradict some of the views of the ancients— ". . . nec rationes quas ad hoc Aristoteles inducit sunt demonstrativae simpliciter, sed secundum quid, scilicet ad contradicendum rationibus antiquorum . . ."

[41]"Sed si quis recte rationes hic positas considerat, huiusmodi rationibus veritas fidei efficaciter impugnari non potest. Sunt enim huiusmodi rationes efficaces ad probandum quod motus non inceperit per viam naturae, sicut ab aliquibus ponebantur, sed quod non inceperit quasi rebus de novo productis a primo rerum principio, ut fides nostra ponit, hoc iis rationibus probari non potest, quod patet singulas rationes hic positas consideranti" (*In VIII Phys.*, lect. 2, no. 12).

[42]"Videtur quod mundus sit aeternus; et ad hoc possunt adduci rationes sumptae ex quatuor, scilicet ex substantia caeli, ex tempore, ex motu et ex agente vel movente. Ex substantia caeli sic. Omne quod est ingenitum et incorruptibile, semper fuit et semper erit. Sed materia prima est ingenta et incorruptibilis, quia omne quod generatur, generatur ex subiecto, et quod corrumpitur, corrumpitur in subiectum; materiae autem primae non est aliquod subiectum. Ergo materia nunquam denudatur a forma. Ergo materia ab aeterno fuit perfecta formis suis, quibus species constituuntur; ergo universum ab aeterno fuit, cuius istae species sunt partes. Et haec est ratio Aristotelis . . ." (St. Thomas, *In II Sent.*, d. 1, q. 1, a. 5, sol.).

[43]St. Thomas Aquinas, *Summa Theol.*, I, q. 46, a. 1 ad 3: "Dicendum quod Aristoteles in I Phys. probat materiam esse ingenitam, per hoc quod non habet subiectum de quo sit. In I autem de Caelo, probat caelum ingenitum, quia non habet contrarium ex quo generetur. Unde patet quod per utrumque non concluditur nisi quod materia et caelum non incoeperunt per generationem, ut quidam ponebant, praecipue de caelo. Nos autem dicimus quod materia et caelum producta sunt in esse per creationem, ut ex dictis patet." Cf. *De Pot.*, q. 5, a. 1 ad 11, and *In VII Metaphys.*, lect. 6, no. 1214.

[44]*De Aet. Mundi*, ed. Mandonnet, p. 22.

[45]"Primo ergo ostendendum quod non est necesse ut causa agens, scilicet Deus, praecedat duratione suum causatum, si ipse voluisset" (*ibid.*, p. 23). Cf. *De Pot.*, III, q. 3, a. 13 ad 5; *In III Sent.*, d. 18, q. 1, a. 3 ad 3; *In II Sent.*, d. 1, q. 1, a. 5 ad 7; *De Pot.*, q. 3, a. 17, resp.

[46]*De Aet. Mundi*, ed. Mandonnet, p. 25.

eternity of movement and time are not contrary to the creation of the world but are directed against his predecessors who said that motion had a beginning.[41] All that Aristotle is saying, therefore, is that if the world comes by generation, there is no first motion and that motion is, therefore, without beginning. So, too, Aristotle proves that matter is unbegotten because it has not a subject from which it derives its existence; and the heavens are unbegotten since they have no contrary from which to be generated.[42] St. Thomas argues that no conclusion follows either way, except that matter and the heavens did not begin by generation.[43]

St. Thomas raises the question whether an eternal creation is possible[44] and concludes that it is. There is no need that the cause which is the agent—namely, God—precede in duration what He causes, had He Himself wished.[45] St. Thomas sees no contradiction in saying that something is made by God and was never nonexistent: "Sic ergo patet quod in hoc quod dicitur aliquid factum esse a Deo et nunquam non fuisse, non est intellectam aliqua repugnantia."[46]

In saying that an eternal creation is philosophically admissible, St. Thomas does not mean that a coeternal creation is possible, for the creature cannot be coeternal with God.[47] Even if the world had always existed, it would not be coeternal with God because its duration would not be wholly simultaneous, which is essential to eternity.[48]

To establish and confirm the eternity of all things, Siger discusses, in the third part of his treatise *De Aeternitate Mundi,* the principles of potency and act and their priority in relation to one another. First, act is prior to potency in thought, though potency is prior to act in things which proceed from potency to act:

> Consequenter de tertio videndum est. Cum autem actus potentiam praecedat ratione, nam et potentia per actum definitur, ut aedificatorem dicimus aedificare potentem, actus nihilominus potentis prior est substantia et perfectione in eodem quod de

---

If there were any contradiction, it would be remarkable how Augustine missed seeing it. For this would have been a most efficacious way of disproving the eternity of the world.

[41] *Ibid.*, pp. 25-26. Cf. *Summa Theol.*, I, q. 9, a. 2, resp., and q. 10, a. 1, resp.

[42] ". . . si mundus semper fuisset, non esset Deo co-aeternus; ejus enim duratio non esset tota simul; quod ad aeternitatis rationem requiritur" (*De Pot.*, q. 3, a. 14 ad 1).

potentia ad actum procedit; quia quae generatione sunt posteriora, substantia et perfectione sunt priora, cum generatio de imperfecto ad perfectum procedat, et de potentia ad actum.[49]

Act is also prior to potency in substance and perfection:

Actum etiam prior est potentia, substantia et perfectione, secundum quod potentia et actus in diversis considerantur; quia sempiterna corruptibilibus sunt priora substantia et perfectione. Nihil autem sempiternum secundum quod tale, est in potentia, cor-

[49]*De Aet. Mundi,* III, ed. Dwyer, p. 39. Although act precedes potency in thought—for potentiality is defined through act, as the builder is able to build—potency nevertheless is prior to act in substance and in perfection in a thing which proceeds from potency to act because the things which are later in generation are, in substance and perfection, prior, since generation proceeds from the imperfect to the perfect and from potentiality to act.

[50]*Ibid.* Act is also before potentiality in substance and perfection in the respect that potentiality and act are looked upon in different ways; because eternal things are prior to corruptible things in substance and perfection. But nothing eternal, in the respect that it is such a thing, is in potentiality; in corruptible beings, however, there is an admixture of potency.

[51]*Ibid.*, pp. 39-40. Act does not precede potentiality in time, because in eternal beings one is not before the other in time. But when the act of a certain species and the potentiality to that act are looked upon according to the species, they are both eternal. Man is always in act and is always able to be man. Thus, with things proceeding from potentiality to act, with regard to which one is to come from the other in a cycle to infinity, there is none which is first in time. The seed is from the man and the man from the seed to infinity. Therefore in such things one does not precede the other in time. Thus, from the seed from which a man is generated there is another generating man previously existing; and so also previous to that generating man, since he himself was generated, there must have been a seed from which he was generated.

[52]*Ibid.*, p. 40. In the order of generation potentiality is prior to act, since generation proceeds from potentiality to act; and thus it is prior in the order of time. There is no reason why act should precede potentiality in time except that by a power a being is made in act through some agent of its own kind existing in act. But although from this it follows that the act of the agent precedes in time the act and perfection of the generated thing by that agent, nevertheless, it does not seem to happen that the act of the one generating precedes in time that which is in potentiality to the act of generation. Just as being in potentiality comes into actuality through something of its own species in act, so also the thing existing in act in that species is generated from something existing in potentiality to the act of that species. For just as that which is in potentiality—namely, a man—is brought into act by a man in act, so also the man generating is generated from a previous seed and from a man in potency; and so the hen has preceded the egg in time and the egg the hen, as people argue.

[53]"Secundo considerandum est quod si tota universitas entium causatorum aliquando fuit non ens, sicut voluerunt aliqui poetae, theologi et aliqui naturales, ut dicit Aristoteles XII Metaphysicae, potentia simpliciter actum praecederet" (*ibid.*, pp. 41-42).

[54]"Et si etiam aliqua species entis tota, ut species humana, esse inciperet, cum nunquam actu praefuisset, sicut quidam demonstrasse putant, potentia ad actum illius speciei simpliciter actum praecederet. Sed utrumque eorum est impossibile" (*ibid.*).

ruptibilibus autem est admixta potentia.[50]

Though act is prior to potency in thought, perfection, and substance, there is no priority of act to potency in time, since both are eternal:

> Et videtur quod actus tempore non praecedat potentiam, quia in sempiternis unum non est prius altero tempore. Sed cum actus alicuius speciei in potentia ad illum actum secundum speciem consideratur, utrumque sempiterna est. Semper enim homo est in actu et semper potest esse homo. Quare actus, secundum speciem acceptus, potentiam tempore non praecedit. In his in quibus est accipere unum ex alio circulariter in infinitum, non est quod prius sit tempore. Sed sperma est ab homine, et homo ex spermate in infinitum. Quare in his non est alterum altero tempore prius. Sicut enim spermate ex quo generatur homo est aliter homo generans prius, sic et hominem generantem, cum et ipse generatus sit, sperma ex quo generatur praecedit.[51]

In the order of generation, Siger continues, there is a sense in which potentiality precedes act in time:

> Quod est prius ordine generationis est prius ordine temporis. Sed potentia prior est actu ordine generationis, cum generatio de potentia ad actum procedat, quare et ordine temporis. Sed quamvis ex hoc sequatur quod actus agentis tempore praecedat actum et perfectionem generati ab illo agente, non tamen videtur accidere quod actus generantis tempore praecedat id quod est in potentia ad actum generati. Sicut enim ens in potentia exit in actum per aliquid in actu suae speciei, sic etiam et existens actu in illa specie generatur ex aliquo existente in potentia ad actum illius speciei. Sicut enim illud quod est potentia homo fit actu ab actu homine, sic et homo generans generatur ex priori spermate in potentia homine, ita ut qua ratione gallina ovum tempore praecedit et ovum gallinam, sicut vulgus arguit.[52]

Siger argues that if the whole universe of caused beings were at some time nonbeing then potentiality would precede act absolutely.[53] Further, if some entire species of being would begin to exist when it had never existed before the potentiality of that species would precede absolutely the act, each of which is impossible.[54]

> Si enim tota universitas entium aliquando fuisset in potentia, ita ut nihil in entibus totaliter in actu, semper actu agens et movens, entia et mundus iam non essent, nisi in potentia, et materia per se iret ad actum, quod est impossibile. Unde vult Aristoteles et suus Commentator, XII Metaphysicae, quod res tempore infinito quievisse et postea motum esse, est materiam esse mobilem ex se.[55]

Siger states that, according to Aristotle, no species can begin anew; the species or that which is in act is always generated from a previous species in act and so on to infinity:

> De secundo etiam apparet quod sit impossibile, quia enim primum movens et agens semper est in actu, non prius potestate aliquid quam actu, sequitur quod semper moveat et agat, quaecumque non mediante motu facit. Ex hoc autem quod semper est movens et sic agens, sequitur quod nulla species entis ad actum procedit, quin prius processisset, ita quod eadem specie quae fuerunt circulariter redeunt, et opiniones, et leges, et religiones et alia ut

[55] *Ibid.* If the whole universe of beings at some time had been in potentiality, so that none of the beings would be totally in act, then the beings and the world would not now be except in potentiality, and matter of itself would come into act, which is impossible. For things to be at rest in an infinite time and afterwards to be in motion is the same as for matter to be self-moving.

[56] *Ibid.*, p. 42. Since the prime mover and agent is always in act and something in potency is not prior to something in act, it follows that it always moves and acts and makes anything or does anything without an intermediate movement. From this, however, that it is always moving and so acting, it follows that no species of being proceeds to actuality, but that it has preceded before, so that the same species which were return in a cycle; and so also opinions and laws and religions and all other things, so that lower things circle around from the circling of the higher, although because of their antiquity there is no memory of the cycle of these. We say these things as the opinion of the Philosopher, although not asserting them as true.

[57] *Ibid.*, p. 43. When potency to an act and the act educing that potency are of the same kind in the generator and thing generated, it is not said, in so taking them, that act precedes potentiality absolutely, nor potentiality act, unless the act is taken according to the species and the proper potentiality is taken according to the individual. For a man in act, and a certain man in act, inasmuch as he is generating, precedes in time that which is being in potency; namely, man generated. But because in this order, just as being in potency proceeds into act through something existing in act and so act precedes any given potentiality, so also everything existing in act in this species precedes any given act. Therefore neither simply precedes the other in time, but one comes before the other to infinity.

[58] *Ibid.* Act precedes potentiality in the sense that the first mover leads into act all being in potentiality; but the being in act does not precede in time the being in potentiality, since being in potentiality is regarded as prime matter. Just as God always exists . . . so also does the potential man, since he is regarded as in prime matter; it is never true to say, according to Aristotle, that God existed unless potential man existed or had existed in the seed.

circulent inferiora ex superiorum circulatione, quamvis circulationes quorumdam propter antiquitatem non maneat memoria. Haec autem dicimus secundum opinionem Philosophi, non ea asserendo tamquam vera.[56]

Siger continues this argument and states that in things which are generated from eternity, neither potency nor act precedes one another in time, but one comes before the other to infinity:

> . . . cum accipitur potentia ad actum et actum educens illam potentiam eiusdem rationis in generante et generato, non est dicere, in sic acceptis, actum praecedere potentiam simpliciter, neque potentiam actum, nisi actus accipiatur secundum speciem, et potentia propria accipiatur in respectu individui. Actu enim homo, et actu homo aliquis, utpote generans, tempore praecedit illud quod est potestate ens exit in actum per aliquid existens in actu, ut sic quamcumque potentiam datam actus praecedat, ita etiam omne existens in actu in hac specie, de potentia vadit ad actum, ut sic quemcumque actum datum in hac specie potentia praecedat. Ideo neutrum simpliciter alterum tempore praecedit, sed est unum alterum in infinitum, sicut arguebatur.[57]

Further, Siger concludes that there is no priority in time in things which are generated, for things which are in act and things which are in potency are both eternal:

> Et ideo actus simpliciter tempore debet praecedere potentiam, sicut expositum est, scilicet, quia movens primum, educens ad actum omne ens in potentia, non praecedit tempore ens in potentia, cum accipiatur ens in potentia materiae. Sicut enim Deus semper est, apud Aristotelem, sic et potentia homo, cum accipitur ut in prima ipsa materia. . . . Nunquam enim apud Aristotelem verum fuit dicere Deum esse, quin esset potentia homo, ut in spermate, vel fuisset.[58]

In concluding his discussion of the relation of potency and act and their priority to one another, Siger shows a further priority of act to potency, and here his argument deals with movents which are eternally in act:

> Tertio modo a praedictis actus tempore simpliciter potentiam

praecedit, quia quocumque ente in potentia, ut in materia propria dato, actus illius potentiae, habens ipsam educere ad actum tempore praecedit. Non sic autem quocumque ente in actu dato, potentia ad illum actum tempore praecedit, sicut apparet in moventibus primis educentibus omne ens in potentia ad actum. Utimur autem in praedictis, sicut etiam Aristoteles, moventibus

[59]*Ibid.*, p. 44. Act also simply precedes potentiality in time, because in any being in potentiality, as given in proper matter, the act of that potentiality having to educe the potency to act precedes in time. It is not thus with any given being in act that the potentiality to that act precedes it in time, as is evident in prime movers educing to actuality all beings in potentiality. Thus we utilize, as does Aristotle, prime movers as species of things which are educed from potentiality to actuality by them; and unless they were beings of a certain kind in act which do not proceed from potentiality to actuality, the act would not simply precede the potentiality in time, as Aristotle has said in the ninth book of the Metaphysics, saying that act precedes potentiality in time, adding the reason, because one act is always taken as before another up to the one which is always the prime mover.

[60]"De primo ergo sciendum est quod species humana non est causata, secundum philosophos, nisi per generationem, quia universaliter quorum esse est in materia, quae est in potentia ad formam, facta sunt generatione, quae est eorum per se vel per accidens" (*ibid.*, I, p. 28). Cf. *In de Gen. et Corrup.*, I, 20, ed. Steenberghen, p. 274: there is no production outside of generation; all being is engendered from a pre-existing being which is transformed, and nothing can be corrupted without something being engendered in its place.

[61]"Species autem humana, et universaliter quorumcumque species est in materia, cum facta sit per generationem, non est generata per se, sed per accidens" (*De Aet. Mundi*, I, ed. Dwyer, p. 28). Cf. Averroes, *In Metaphys.*, XII, com. 18, Vol. VIII, fol. 143v. ". . . et ideo forma apud ipsum non habet generationem, neque corruptionem, nisi accidentaliter, scilicet per generationem et corruptionem compositi."

[62]"Ratio autem communis formae et speciei quod non generantur per se, est quia ad neutrius rationem pertinet signata materia, ex qua fit generatio per se, per eius transmutationem de non esse ad esse, seu de privatione ad formam. Species autem humana, quamvis non sit generata per se, est tamen generata per accidens, quod sic contingit, si homo, sicut abstractus est ratione ab individuali materia, seu individuo, sic et esset abstractus in esse. . . . Hinc est quod homo generatur per generationem cuiuslibet individui, et non unius determinati tantum" (*De Aet. Mundi*, I, ed. Dwyer, p. 29). Determined matter does not pertain to the meaning of species, and therefore species is not generated essentially. "Nunc autem ad rationem speciei non pertinet determinata materia, et ideo non generatur per se . . ." (*ibid.*).

[63]That the species is new and began to exist when it had not previously existed, must be denied. "Et primo dicendum ad eam, ut sub forma prima proponitur, negando propositionem dicentem, quod species illa nova est et esse incepit, cum penitus non praefuisset" (*ibid.*, p. 30).

[64]See *ibid.*, pp. 29-30. "Ex iam dictis patet quomodo species humana a philosophis ponitur sempiterna et causata. . . . Hinc est quod species humana semper est, nec esse incepit, cum penitus non praefuisset, est dicere quod aliquod eius individuum esse inceperit ante quod non fuerit aliquid individuum illius speciei." And since the human species is not caused otherwise than because it is generated through the generation of one individual before another, the human species, or that which is called by the name of man, begins to be; for universally every generated thing begins to be; yet it begins to be though it was and existed previously. "Et cum species humana non aliter causata sit, nisi

primis tamquam speciebus rerum quae educuntur de potentia ad actum ab his, et nisi essent huiusmodi entia in actu, quae non exeunt de potentia ad actum, non praecederet simpliciter tempore actus potentiam, quod designavit Aristoteles IX Metaphysicae, dicens actum tempore praecedere potentiam, causam subiungens, quia semper accipitur actus alius ante alium, usque ad eum qui est semper movens primum.[59]

Having established the eternity of matter and the eternity of material species and their eternal relation to one another, Siger applies these principles to the human species; the eternity of species will be his most forceful argument for proving an eternal world. Since the being of all things is in matter, which is in potency to forms, the human species cannot be immediately produced but must be made through a generation which is either essential or accidental.[60] The human species—and in general all things which are in matter—is not generated essentially but accidentally,[61] since it is made through generation. Forms and species are not generated essentially because individuated matter pertains to the consideration of neither of the things from which generation essentially comes; that is, through the transmutation of the thing from nonbeing to being or from privation to form. The human species, though not generated essentially, is nevertheless generated accidentally, because man, just as he has been abstracted in thought from individual matter and from the individual, so might be abstracted in existence. Man is therefore generated through the generation of any individual and not only of one determined individual.[62]

The human species is eternal and caused[63] because in the individuals of the human species one is generated before the other eternally, and the species has to be and to be caused through an individual's existing and being caused.[64] Man begins to be through the generation of a Socrates, let us say, who is generated; he exists, nevertheless, through the existence of a Plato of the previous generation.[65] So, too, the fact that, when Socrates is generated, man begins to be does not mean

---

quia generata per generationem individui ante individuum, species humana, seu illud quod dicitur nomine hominis, esse incipit, cum universaliter omne generatum esse incipiat, incipit tamen esse cum esset et praefuisset."

[65]"Homo enim esse incipit per generationem Socratis qui generatus, est tamen per esse Platonis prius generati" (*ibid.*, p. 30).

that man begins to be in such a way that he had not in any way previously existed.[66] Any individual of this kind began to be when he did not previously exist, because even though it be true that no individual man began to be after not yet existing, no individual of this kind begins to be unless another one had previously existed.[67]

[66]*Ibid.*: "Sic etiam quamvis Socrate generato, homo esse incipiat, non est dicere quod sic incipiat quod penitus non praefuisset" (*ibid.*).

[67]"Cuius individuum quodlibet esse incepit cum non praefuisset, quia licet nullum sit individuum hominis quin esse inceperit cum non praefuisset, nullum tamen individuum eius esse incepit quin aliud praefuisset" (*ibid.*). Although there is no individual man but that he has begun to exist when he had not existed previously, yet there is an individual before the individual to infinity; it is thus that man does not begin to be when he had in no way existed before. "Sicut etiam, licet nullum sit hominis individuum quin esse inceperit, cum non praefuisset, quia tamen individuum ante individuum [est] in infinitum, ideo homo esse non incipit cum penitus non praefuisset . . ." (*ibid.*).

[68]". . . immo exit et exivit in esse species humana per accidens, generatione individui ante individuum in infinitum, non in aliquo individuo determinato solum, cum penitus non praefuisset. Hoc autem non est eam exire in esse in aliquo individuo determinato solum et cum penitus non praefuisset" (*ibid.*, p. 32). Cf. *In Metaphys.*, III, 13, p. 119: the perpetual generation of individuals insures the permanence of species.

[69]"Unde mirandum est de sic arguentibus, cum enim velint arguere speciem humanam incepisse per eius factionem, et non sic per se factam, sed factione individui, ut fatentur. Ad ostensionem suae intentionis, deberent ostendere non esse generatum individuum ante individuum in infinitum. Hoc autem non ostendunt, sed unum falsum supponunt, quod species humana non possit esse facta sempiterna Deo, nisi facta sit in aliquo individuo determinato et aeterno, sicut species caeli facta est aeterna; et cum in individuis hominis nullum aeternum inveniant, totam speciem incepisse, cum penitus non praefuisset, demonstrasse putant" (*De Aet. Mundi*, I, ed. Dwyer, p. 32).

[70]Cf. A. Forest, *La structure métaphysique du concret selon saint Thomas d'Aquin*, ("Études de philosophie médiévale," Vol. XIV [Paris: J. Vrin, 1931]) 146-47. Essence is eternal and there can be no question of its creation. We are in the presence of a cycle of generation and corruption; the principles of being are matter and form, and not essence and existence. Cf. also p. 159. For Siger essence is real, not in the Platonic sense, but because it is always actualized in concrete individuals.

[71]". . . si homo est non ens, homo est non homo, eo quod ad negationem superiorum sequitur negatio inferiorum. Latet autem contradictoria implicari, quando ponimus hominem esse non ens, eo quod aliqua sunt entia de quorum ratione non est ens simpliciter, sicut individua generabilium et corruptibilium; et ideo ponere tale quid non esse ens, nihil implicat contra eorum rationem" (*Quaestio utrum Haec Sit Vera: Homo Est Animal Nullo Homine Existente*, ed. Mandonnet, p. 69). Cf. J. Paulus, *Henri de Gand. Essai sur les tendances de sa métaphysique*, ("Etudes de philosophie médiévale," Vol. XXV [Paris: J. Vrin, 1938]) 109, n. 1. In the specific concept of man, there is necessarily included the concept of the existence of the human species. Cf. p. 109. To deny that man is an existing being is to implicitly deny that he is an animal or a man since these are the highest determinations of the idea of being. One cannot say that man is an animal when no man exists; this would transfer to man as such (human species) a contingency common to perishable individuals. Thus, it is impossible for the human species to disappear entirely. Cf. also p. 272. In the existing individual, physical laws are mutable and contingent, but these are in the essential existence of species.

The human species comes, and came, into being accidentally by the generation of individual before individual to infinity. This is not to say, however, that the human species comes into existence only in some determined individual and when it had not existed before.[68] Whence we should wonder about those who argue that the human species had begun through its being made and that it was not made essentially but rather by the making of the individual. To show their intention they ought to show that individual has not been generated before individual to infinity. This, however, is not shown by those who hold that there is a beginning in species; but they propose one false theory, that the human species is not able to have been made eternal by God unless it had been created in some determined and eternal individual, just as the species of heaven was made eternal; and when they find no eternal being among human individuals, they think that they have demonstrated that the whole species began to exist when it had not been at all before.[69]

Thus, according to Siger, the human species could not begin to be because it would have no reason for being unless it always existed.[70] The human species eternally exists in individuals; and the world of individuals must be eternal, since the species always exists in some individuals. For species, essence, forms of material things to exist at all, they must realize themselves in some matter; otherwise, they would not be species of material things. Species of this kind could not be except in individuals; their realization in individuals must always go on; and in this way the individuals eternally perpetuate the species through generation. The problem whether it is true that man is an animal when no man exists presupposes an impossible conclusion because there are always men and humanity;[71] and in this sense the species is eternal and constantly actualized in a certain number of individuals.

In the second part of the *De Aeternitate Mundi*, Siger discusses universals and refutes Platonic idealism, which holds that the universals pre-exist the individuals. The universal, because it is a universal, is not a substance and is different from any singular. If, therefore, the universal, in that it is universal, would be a substance, then it would be differing in substance from any of the singulars; and each singular

would be a substance in act, both singular and universal. Thus universals would be distinct substances and separated from particulars; and it amounts to saying the same thing, according to Aristotle, that universals are substances and that they are separated from particulars.[72] If, therefore, "man" and "stone" are universals, they are universals

[72]"Universale, secundum quod universale, non est substantia, sicut vult Aristoteles, VII Metaphysicae. Quod et sic patet. Universale, secundum quod universale, differt a singulari quolibet. Si igitur universale, secundum quod universale, esset substantia, tunc esset in substantia differens a quolibet singularium, et utrumque esset substantia in actu et singulare et universale. Actus distinguit. Quare essent universalia substantiae distinctae et separatae a particularibus; propter quod apud Aristotelem, idem fuit universalia esse substantias, et ipsa a particularibus esse separata" (*De Aet. Mundi*, II, ed. Dwyer, p. 34).

[73]"Si igitur, hominem vel lapidem esse universalis non est nisi ipsa universaliter et abstracte ab individuali materia intelligi, non habent [esse] ista, homo et lapis, nisi in anima. Abstractus enim intellectus eorum non est in rebus; tunc ista, secundum quod universalia, sunt in anima" (*ibid.*, p. 35).

[74]It is not necessary that the universal exist in actuality before it may be known, because the universal in actuality is intelligible in actuality. "Et est etiam attendendum, quod non est necesse ipsum universale in actu, prius quam intelligatur, eo quod universaliter in actu est intelligibile in actu" (*ibid.*, p. 36). Cf. *Quaestio utrum Haec Sit Vera: Homo Est Animal Nullo Homine Existente*, ed. Mandonnet, p. 67. "Sed Albertus Coloniensis probabilius praedictis dictis. Dicit eam esse veram in suo libello De Intellectu et Intelligibili, scilicet quod, quia de aptitudine essentiae est ante materiam et compositum individuum, patet quod nullo homine existente particulari, adhuc haec est vera: homo est animal, et alia huiusmodi locutiones cuius intellectus est iste, quod quia ad essentiam humanam non pertinet materia alicuius individui, nec aliquod individuorum, cum homini contingat animal per suam essentiam per id quod ad eius essentiam pertinet. Hinc est, quod sublatis individuis omnibus quae ad essentiam hominis non pertinent, quod adhuc debet esse verum, hominem esse animam."

[75]See *De Aet. Mundi*, II, ed. Dwyer, pp. 37-38. That nature by which is caused the act of the intelligible and of the intellect which is the intellect in act is the active intellect and also the phantasm which naturally precede that act. "Sed huius solutio est quod natura illa unde causatur actus intelligibilis, et intellectivi qui est intellectus in actu, sunt intellectus agens et phantasma, quae naturaliter praecedunt illum actum. Quomodo autem ista duo concurrant ad causandum actum intelligendi, requirendum est super IIIum de Anima." The universal is not a universal before the concept and the act of understanding, as at least that act is of the active intellect. ". . . universale non est universale ante conceptum et actum intelligendi, saltem ut ille actus est agentis." For the understanding of the thing which is in the possible intellect since it is possible as regards the subject belongs to the active intellect as efficient. "Nam intellectus rei qui est in possibili, cum sit possibilis sicut subiecti, est agentis ut efficientis." Thus the universal does not have formally that which is universal from the nature which causes the act of understanding. "Unde universale non habet formaliter quod sit universale a natura quae causat actum intelligendi." The universal receives its universality from the actuality of the concept. "Immo, sicut prius dictum est, ille conceptus et actus est unde universale habet quod sit universale." The universals, therefore, in that they are universals, are entirely in the mind. "Universalia, secundum quod universalia, sunt in anima tantum." On this account they are not generated by nature inasmuch as they are universals, neither essentially nor accidentally, for the nature which is stated and

only in the sense that they are known universally and abstractly from individual matter. These things do not exist thus in the nature of things, because if understood, those things, "man" and "stone," do not have existence except in the mind. For the abstract comprehension of those things, because they are universals, are in the mind.[73]

Siger also refutes Albert the Great, according to whom there is a certain priority in nature of the universal in relation to its presence in intelligence,[74] the universal being according to him a causal role in the actuation of thought. Siger responds that this causality is superfluous and that the operation of intelligence is sufficiently explained by the agent intellect and the phantasms.[75]

Siger's conclusion is that since prime matter is permanent and eternal, and since the species are successive, generative, and eternal, the world also must be eternal. For Siger, creation is eternal in all its degrees; the immediate effect of God is necessarily one and eternal, and corruptible beings depend on God through the intermediary of incorruptibles. Siger does not seem to have conceived of the idea of a truly free Creator; the effects of God must be necessary and eternal to insure the divine immutability.[76] So, too, with species and the human species in particular. As an effect of God through intermediary causality, it is necessary that the human species be eternal and that it be eternally realized in a plurality of individuals which are perpetual and infinite in number, which individuals, in turn, account for the perpetual generation of species.

---

understood universally is in particular things and is generated accidentally. "Propter quod nec generantur a natura in quantum universalia, nec per se nec per accidens. Natura vero quae universaliter dicitur et intelligitur, in particularibus est, et per accidens generatur."

[76] *In III de Anima,* II, ed. Steenberghen, pp. 165-66. All new or temporal effects are the result of a transformation, for if the First Cause produced a new effect, it would imply change in His will and action. Cf. *In Phys.*, VIII, 7, ed. Delhaye, p. 203. If one affirms or supposes that God can wish something that He has not made, one introduces the possibility of change in the divine will and therefore in the divine substance. (Siger argues against creation out of nothing since it suggests the beginning of the world in time, after nothing, and thus destroys the necessity of species.) Cf. also *De Anima Intellectiva,* V, ed. Mandonnet, p. 160. "Falsum est animam intellectivam de sui natura esse nihil, quod per se est impossibile, per nihil aliud est possibile."

Fourth German Congress of Philosophy, Stuttgart, 1954

(Continued from page 222)

teaches us a profound questioning, but it is not the only way to salvation. Existential thinking can lead to renouncing all philosophical thinking and to a lethal leap into "faith"; it can also lead to a sharper awareness of the fact that existential need drives to a more profound philosophy. But there is always a danger of the most extreme shrinking into subjectivity which loses all contact with the powers which condition existence, be they culture or still higher forces. Above all, existentialists should tell us what they mean by existence and existentialism.

The other side of contemporary philosophizing, according to Spranger, is the rebuilding of philosophy. For many this means the return of the educated man to Christian faith and a close relation to theology. Necessary as this may be for the general public—and even though Spranger himself has worked in this direction—he thinks that his writings which have this orientation are to be considered "homilies" rather than philosophical writings. Many circles of evangelical theology condemn all philosophy and thereby run a great risk. In times of crisis philosophy is a necessity. Philosophy and theology are different, even though a personal union is not impossible. There is a philosophy of revelation but not a revealed philosophy. We must put together all the factors which influence human life. Man must never forget that he is faced, not with isolated individuals, but with a world; and so he must ask himself, Can this world rest in itself? For this total thinking many things are still lacking; let us recall merely the law of nations. And yet we must again take hold of the work, out of a real drive for knowledge and with a conviction that philosophy has a role in the world which cannot be replaced and gives a service to the whole.

Not all the papers of the congress fulfilled the demands of Spranger. Some indeed gave partial views and let something of the high ethos of philosophy slip. But in general the impression was that since the war a catharsis has been effected, that the useless elements of philosophy, the exaggerated, one-sided, and excessive positions, slowly but certainly have been abandoned. Irrationalism, positivism, *outré* idealism no longer find an echo. Thoughts are again spoken which lead to realism, to ontology, and even to metaphysics, provided that they are solidly developed and worked out of the modern problematic. All this rightly deserves support.

Arthur A. Vogel

EFFICIENT CAUSATION AND THE CATEGORIES

The Reverend Doctor Arthur A. Vogel is associate professor of apologetics and dogmatic theology at Nashota House. He received his M.A. from the University of Chicago and his Ph. D. from Harvard University. He has previously taught at Trinity College (Hartford). He has written for the Journal of Religion *and the* Anglican Theological Review.

It is the obligation of any long-established tradition in philosophy to "keep abreast of the times," as well as to preserve its heritage from the past. Indeed, open co-operation with the contemporary scene is as often a necessity as it is a freely-practiced virtue. An increasing portion of the Aristotelian tradition, it would appear from recent articles and books, is beginning to accept this view. The need for a critical re-evaluation of some of the complexities of Aristotelian thought appears now to be felt in many quarters; and, where there has been a serious re-examination of historical texts to this end, an equally significant need has often been satisfied in the rediscovery of old insights. One aspect of such rediscovery and critical evaluation is the subject of this inquiry.

We wish to call attention at once to the adjectival use of the proper name in the preceding paragraph, for the scope of this paper will be more inclusive than that of the texts of Aristotle alone. It is a central tenet of the thought of Aristotle, especially as it has passed through the elaborations of Aquinas and so reaches the contemporary scene, that we desire to examine.

Our contention will be that in recent existential interpretations of the Aristotelian tradition a conspicuous deficiency may be noted in the tacit, unmodified acceptance of the usual doctrine of the categories. More specifically, we believe that a thoroughgoing and consistent existential interpretation of the Aristotelian notion of efficient causation involves consequences for the doctrine of the categories which have yet to be drawn by its advocates.[1]

Although the dynamic, existential aspect of nature was noted by Aristotle, more fully developed by Aquinas, and is now re-emphasized in this same general tradition by such men as Gilson, none of these statements appears to be as thoroughgoing or as consistent as the principles of the analysis from which they spring would seem to demand. This deficiency is most evident in the exposition of the classical Aristotelian theory of efficient causation, to which Aquinas and the majority of contemporary Aristotelians adhere. Aristotle's concern with essence and form did much to handicap a clarification of the status of efficient causality. Although he recognized the distinction between essence and existence, the principal emphasis in his *Metaphysics* was upon the former rather than the latter. It is upon the basis of this emphasis that he is called an essentialist by some recent critics. We agree that the concept which Aristotle and his followers did not sufficiently develop in its *metaphysical* aspects, although the prerequisites for such a development lay openly before them, is that of tendency. Aristotle did not emphasize the vital role played by existence in reality and the role that essence plays *in its union* with existence. Essentialism cannot account for the dynamism of nature, and one manifestation of nature's dynamism is efficient causation. It is the recognition of this fact, we hope to show, which should alter the traditional doctrine of the categories, in at least two of its instances, although this consequence seems to be generally overlooked or neglected.

The problem of causation in Aristotelian thought is as complicated as it is vital. Few would deny this; in fact, there are some who would use this complexity as an a-priori argument against the theory itself. It is partially because of this complexity and the interrelatedness of the various parts of the Aristotelian system that many of the preliminary remarks of this paper must be left undeveloped. This procedure is necessary if we are to reach and adequately consider that aspect of causation which is most important for the issue at hand, but it will have an additional advantage in saving many readers the mental anguish of wondering why an "Introduction to Aristotle" should be

[1]The only anticipation of our point in print, of which we are aware, is the passing reference made to it by Professor John Wild in "Tendency: the Ontological Ground of Ethics," *Journal of Philosophy*, July 3, 1952, p. 472. Wild, however, does not there develop the implications of this view as they are related to, and limit, the usual exposition of the doctrine of efficient causation.

submitted to a contemporary journal. There is a limit, however, to the amount of perhaps familiar material which can be assumed if our final criticism is to be clear. Therefore we shall proceed by first indicating, as briefly as possible, the specific interpretations and distinctions which our criticism presupposes; then we shall turn to the proper development of our thesis; and finally we shall offer a summation of our principal contentions.

Proceeding to the basic distinctions and interpretations which constitute our point of departure, it may be recalled that metaphysics or ontology has most properly been described, from the time of Aristotle on, not as the science of being, but as the science of being *qua* being. As is well known, this means that being is not to be studied in metaphysics just as it is found in a given specific or particular manifestation. But as soon as the concept of being is considered in the desired universal sense, an ambiguity in its usage is apparent: it is sometimes used as a participle to indicate the being which a thing *has*, and it is sometimes used as a noun to indicate *what* the nature of the thing is which has being in the former sense. The participial usage relates to the act in virtue of which we refer to a thing as existing, while the noun usage refers to the essence of the thing so existing. Here are the traditional concepts of *essence* and *existence*, or *res* and *ens*.

The point which cannot be overstressed here is the relation which exists between these two principles for the Aristotelian tradition. Essence and existence are so intimate that neither is found without the other. Each is only "in" the other and is necessarily related to the other, but this is not a case of juxtaposition where one thing is *added* to another. Something of the lack of precision, or at least the lack of distinctness, which characterizes all genuine metaphysical thought in this school will now be apparent, for being, as the subject matter of metaphysics, must be considered in both of these aspects. The phrase "being qua being" may thus be reinterpreted as "essence qua existential act"; that is, essence as it is existentially actuated. Being cannot be understood in a simple concept.

An additional lack of precision is also inevitable where being as such is studied, because being, in one sense, includes everything; it is adequate in extent to the whole universe and so it excludes or abstracts

nothing. On the other hand, since it refers to everything, it does not refer to one thing more than another. Here is its "confused" aspect; its very inclusiveness requires that it be nonvocal about the differences which are implicitly contained within it. The concept of being demands that differences be contained within it; but at the same time it cannot allow diversity to reach the point of complete equivocation, if it is to be instructive. A compromise between these two alternatives has been offered in the much-discussed claim that the concept of being is an analogous one.

The reference here, of course, is to the classical doctrine of the analogy of being. This doctrine gives conclusive evidence of the basic existential insight of the Aristotelian metaphysics and, as such, must be carefully distinguished from the "reasoning from (or by) analogy" about which contemporary inductive logic speaks. Analogical predication, as it will concern us, is that predication which is too imperfect and confused to be called univocal[2] but which nevertheless is not accidental and arbitrary, as equivocal predication is. It is said to arise from an "imperfect abstraction"; that is, one which cannot *completely* abstract from the individuating characteristics of the objects considered. As such, analogical predication deals only with similarities, not identities, and these are usually expressed in a *quasi*-mathematical fashion. Thus two terms and their relation, considered as a complex whole, are said to be similar to two other terms and their relation, considered as another complex whole; the essence of John is to his existence as the essence of Fido is to his existence; A:B::C:D.[3] The existence of no thing is *exactly* the same as the existence of any other thing.

Essence and existence, it must be further noted, are correlatives; neither is found without the other. Each pervades the other completely; each involves the other; and each contributes something positive to existing individuals. Essence is the more intelligible aspect of being and so places a thing within a definite species; existence has traditionally been considered as placing a thing "outside of nothingness" or allowing it "to stand outside of its causes." Each determination is only an aspect of an existing substance which is distinguishable

[2]The "highest" or most universal concepts of a *univocal* nature for this tradition are the ten categories.

[3]This has traditionally been called the analogy of proper proportionality.

[4]Aristotle *Analytica Posteriora* ii. 1.

to the intellect. Essence and existence are not themselves existing things; they are the *principles* by means of which existing things are constituted, by means of which the most general traits of our experience can be characterized.

Granting that we can never experience essence without existence or vice versa and that each is only with, and because of, the other, it has been pointed out, nevertheless, that a priority of some type must be allowed for existence if the Aristotelian position can refer to anything within its own analysis which can successfully overcome the attacks of essentialism that have been directed against it. It is the dynamism of nature which has presented the most difficult and persisting problems to philosophy and which has best escaped a satisfactory philosophical analysis. No better source can be found for such dynamism in this tradition than the priority of the existential act over its essential characterizations. The proper metaphysical order of things in a philosophy which seriously maintains the priority of the *whether* a thing is over the *what* or *why* it is,[4] is to recognize that existence must, in some sense, ontologically precede essence. Primarily there is an act of existence; but as this act is an individual or particular act, it involves a certain nature or characterization, which is its counterpart and its essence. The essence can be said to characterize and limit the existential act; but, as limiting it, it determines the *direction* in which the existential act will exercise itself rather than stifles it and altogether isolates it from other existential acts.

Approaching more closely to our primary concern, it may be remarked that the concept of causation, broadly taken, is an attempt to account for the order which is observed in the changing world around us. Changes and events do not just happen; they seem to happen only when they stand in a certain relation to other changes or events. Where such relations are thought to be based on a real efficacy between the things related, the causal nexus is said to be present. This characterization applies particularly to the Aristotelian notion of efficient causation; but, as is well known, this tradition does not limit the concept of causation to this one mode.

Nor does this tradition include causation in the univocal aspects of reality, which are said to be summarized in the ten categories. Causa-

tion is not defined in relation to the categories or to phenomena. It is defined only in relation to being: it is a positive source or beginning of being. As such, causation may be considered a mode of being which transcends univocal predication. Causality is held to be a truly ontological distinction because it is a mode in which *being* is present; it is a realization of being where it was previously lacking or where it otherwise need not be.

There is a significant sense in which the efficient cause has been called the "first genus" of the four causes of Aristotle. Certainly the efficient and formal cause represent different modes of causation. Neither implies the other in the sense that one can be deduced from the other; but they, as essence and existence, are never found apart. The reason for this is that, in a vital sense, formal causality is indicative of essence and efficient causality is indicative of existence: the former is ultimately responsible for the structure and the latter is ultimately responsible for the existence of a being.

The efficient cause is defined by Aristotle as "that from which the change or the resting from change first begins . . . in general the maker is a cause of the thing made and the change-producing of the changing."[5] An efficient cause is thus the external principle from which change or rest begins. As actually operating, such causes "exist and cease to exist simultaneously with their effect; for example, this healing person with this being-healed person and that house-building man with that being-built house . . ."[6] Thus it is seen that temporal succession is not the essence of efficient causality for the Aristotelian tradition as it was for Hume.

So much can be said without difficulty; but when efficient causation is described in its positive or contributive function, only paradoxes seem to result. First of all, it is clear that the efficient cause is responsible for the *existence* of things. It is the cause of things as they *are*, not as they are *such and such*. However, as the efficient cause is said to be the positive source of change, it has been described as some-

[5] *Metaphysics* Δ. 1. 1013a29.

[6] *Physics* ii. 3. 195b17.

[7] It has been pointed out that the attempt to account for the connective or relative aspect of causality by an appeal to atomistic sensations alone would be "like supposing that a bridge across a river ought not to leave the bank, or like asking one to confine his scrutiny solely to the bricks comprising a brick wall and then locate the cement" (George P. Adams, "The Nature and Validity of the Causal Principle," *Causality* [Univ. of California Press], p. 218).

[8] Aristotle *Metaphysics* Θ. 6. 1048a26 ff.

[9] *Ibid.*, 8. 1049b24.

how "penetrating" or "flowing over" or "spilling into" the very being of the thing changed. These descriptive terms are spatial and physical in origin; but as they are here used to adumbrate a metaphysical point, the Aristotelian tradition has consistently warned that they are not to be taken in a spatial or physical sense. The possibility and propriety of such a procedure must obviously stand or fall with the ability of the mind to be significantly cognizant of reality in an abstraction which comes from sense data but which cannot itself be sensually represented.[7] If concepts or ideas are not allowed to have this nature, no partisan of the present position can avoid the charge of nonsense.

A more adequate conceptual elaboration is desired and needed for this causal situation, however, and for this purpose the concepts of actuality and potentiality have traditionally been employed. Actuality and potentiality can serve this purpose only because they are basic, intuitive, analogical concepts. They are the basis for an attempt to render efficient causality intelligible, and so it is held that they must be metaphysically prior to the concept of causation. This *metaphysical priority* derives from the fact that potentiality and actuality must first analogically and intuitively[8] be acquired and applied as indicative of that most fundamental relation between essence and existence before they can "properly" be employed to "make intelligible" the relation of cause and effect.

Viewed in this light, causation is not a bestowal of an existent entity upon another existent entity but the production of a new formal actuality that previously was only *potentially* in the effect. An accident of one substance is not divided up and then passed to another substance in causation; rather, the *unimaginable* situation is that the actuality of one being is said to actualize the potentiality of another being. "For from the potentially existing the actually existing is always produced by an actually existing thing . . . there is always a first mover, and the mover already exists actually."[9]

Employing the terms "actuality" and "potentiality" has definitely lifted the present discussion above the level of sense data; for their primary, metaphysical significance is that of indicating the relation of existence to essence, which distinction penetrates beneath the level of sensation. But even actuality and potentiality cannot explicitly de-

fine the peculiar efficacy of the efficient cause. As there are no terms more basic than these with which to describe the causal situation, and since even when they are used the new actuality of the effect is said to be *produced* by the cause, the only conclusion which we can draw is that the efficacy of the efficient cause cannot be made conceptually explicit. As soon as the word "production" is used in a statement, the crux of the problem has been assumed.

While the Aristotelian tradition must admit the difficulty just mentioned in making clear the exact *manner* of efficient causation, it nevertheless tenaciously clings to the necessity of the concept itself. This must be the case because it views the need for efficient causality as a consequence of the inviolable principles of contradiction and sufficient reason. All that such metaphysical explanation can do here is to say that difficulties which spring from our manner of knowing reality cannot legislate to that reality itself. Because of the basic orientation of our intellect toward being, it is said that individual things must be able to efficaciously influence each other, just as it is said that existing things must have an essence. However, there is no more compulsion to say that man must be able to penetrate to the internal structure of this process than there is to say that he must be able to penetrate to an internal knowledge of the essence of natural objects. This conclusion is not one that is satisfying to man's thirst for distinct and univocal ideas; but it is not an anomalous conclusion when it is viewed within the entire metaphysical formulation of reality that we are now examining.

The basic core of existence is overlooked when we are seeking conceptually clear knowledge, for this is not of the order of forms which allow intellectual abstraction. Existence is an act which is best expressed in a judgment, not in a concept. It is the ultimate source of everything; and even though there is no existence without essence, the question of the *existence* of a thing must precede the question of the *mode* in which it exists.

The act of existence is the fundamental aspect of being. This act

[10]The example which we have given is that of an inanimate object, one in which, as Aristotle would say, the formal and final causes coincide. Where rational being is concerned, and the formal and final causes do not coincide, the existential tendency of which we speak manifests itself through the exercise of free will. Here the situation, and any consequent analysis of it, must become more complex; but that is not to say that it must be in any way inconsistent.

is a constant and ceaseless flow which escapes abstract representation. It is dynamic and changing in nature, and, as such, it is the source of all the dynamism in the world. This basic act, when it is viewed with the restrictions of form or essence, reveals itself as a *tendency* to one thing rather than to another; this tendency is the basis for efficient causation. The Aristotelian tradition has laid itself open to the charge of essentialism just insofar as it has failed to emphasize this point. It has failed satisfactorily to justify the notion of efficient causation because it has been too much concerned with the more static aspects of being—essence, form, and substance. The emphasis which Aristotle gives to substance in his *Metaphysics* tends to completely overshadow the insight he evidenced in the *Posterior Analytics* concerning the relation of essence to existence. Tendency is the way that essence and existence manifest their union; it is a metaphysical notion which arises from the fundamental analysis of the nature of being. Failure to recognize or stress this point has been one of the greatest defects in the Aristotelian tradition. This failure, it is now being realized, has also removed the proper context within which efficient causation must be considered.

Essence or form is merely a limitation of the mode in which existence acts; hence the presence of form does not require a complete staticism. Existence, for example, may manifest the essence of paper; but this does not mean that it thereby lacks tendency or is precluded from further change. It only means that there is a *determinate way* in which such change must occur. Existence cannot be statically represented because its very nature is not to be static or quiescent but to tend toward, or to relate itself to, another. The way in which it relates itself to others is what we call efficient causation.[10]

Efficient causation is not made intrinsically intelligible by poetic descriptions, nor is it explained by saying that it belongs to the order of existence rather than that of essence. All that the Aristotelian metaphysical position can do is make the conceptual deficiency of efficient causality *less shocking* by showing that it is founded upon the principle of existence, which is an intellectually discoverable and *undeniable* aspect of being or reality. Then it can at least say that the lack of precision about efficient causation is not surprising, for, by its nature,

it is grounded in our lack of conceptual precision about existence.

After it has been admitted that the nature of efficient causation cannot explicitly be evidenced by conceptual knowledge, an analysis can still be made, on the basis of the *fact* of its existence, which indicates some consequences of its presence. These consequences are usually presented as if they were completely explicative of the causal nexus in question, but our examination shows this not to be the case. First of all, it is evident that the efficient cause does not cause by its entity alone. The effect of the efficient cause is distinct from it; thus it needs something over and above its entity which will enable it to have this transcendent function.[11] Action (*actio*) is the term applied to this transcendent causality. This action is called the second act of an efficient cause to distinguish it from the actuality of the cause that does not transcend its being and which, accordingly, is known as the first act of the cause. An "adequate" cause is one viewed as in its second act. Passion (*passio*) is the term applied to the effect as it depends on the agent; it designates the "that by which" (*id quo*) the effect receives the action of the agent—*as the effect is actually being received.* Action and passion are not two separate *things,* however; they are really but two aspects of one change. As Aristotle said, cause and effect are a single process described in different ways.[12] The change of which action and passion are the two aspects is said to be formally in the effect, for it is in the subject acted upon that the potency is being actualized. So it is that action must essentially tend towards another.

The action and passion referred to here are two of the ten categories listed by Aristotle. As categories, they take their place among the highest genera that we can discover and, consequently, are the basis of univocal predication. Assent to this view is general in the Aristotelian tradition; but it seems to us that it can be so only at the expense of repudiating the preceding analysis or of not carrying it to its logical and ultimate conclusion. The efficient cause is said to bestow existence; it is a manifestation of the principle of existence which is necessarily involved in every being. With this background, consistency would

[11]Cf. John of St. Thomas, *Cursus Philosophicus,* II, 263a34 ff.

[12]Cf. Aristotle *Physics* iii. 3. 202a12 ff.

[13]If our criticism is legitimate, of course, passion must be subject to analogical predication in the same sense that action is.

[14]Aristotle *Physics* iii. 2. 202a9.

seem to require that the peculiar characterizations of existence should also be applied to it. It would appear that just as existence was found to be analogical in nature, so efficient causality must be analogical in nature. Efficient causality is not a univocal concept. As the existence of one thing is not the same as that of any other thing, so the causal efficacy of one thing is not exactly the same as that of any other thing; but as the existence of one thing is proportionally similar to that of another, so the efficient causality of one thing is proportionally similar to that of another. This conclusion is the logical outcome of the intimate way in which causal efficacy is related to a thing's existence. Indeed, the causal efficacy of a thing has been said to be one of the best indications that we have for determining the degree of a thing's actuality. This being the case, it seems strange that the Aristotelian tradition would view efficient causation in such an external manner as to deny that the analogical nature of existence applies to it.[13]

A possible suggestion as to why action and passion are not considered analogical in nature may be found in the fact that essence and existence are correlatives. As they are always involved together in the real world, there is a tendency to confuse the formal aspect with the existential one. In one sense, the effect of efficient causation is a form; this is what the efficient cause actualizes in its subject; and Aristotle himself called attention to the fact that "the mover or agent will always be the vehicle of a form."[14] Forms are the basis of univocal predication; and if the intimate and individual *manner* in which they are actualized is overlooked in favor of the form actualized, univocity is all there is to be found. This is an error which is founded upon the essentialistic tendency that we have previously noted.

In conclusion, it can characteristically be said of that aspect of the Aristotelian tradition with which we are concerned that the need for, and existence of, causation can be shown if the proper intellectual criteria—that is, those which will allow the establishment of metaphysics as an empirical and meaningful discipline—are acknowledged. After this much has been established, however, it is our contention that the claims of metaphysical explanation must be of a more moderate nature than they are usually pictured. It follows without difficulty that, upon the Aristotelian view, causation cannot be pictured as one

object giving some *thing* to another object. Only things can be imagined or sensed, but the positive contribution of a cause to its effect is not of this nature.

In summary fashion, it may further be said that the proper terms for characterizing the causal process, according to the Aristotelian tradition, are actuality and potentiality. These terms, it is maintained, are metaphysically prior to those of cause and effect and so can properly be said to elucidate the latter; but for this very reason they do not give the distinct knowledge that we desire. They provide distinctly *metaphysical* terms with which to describe what must be said to happen in the causal process, and so they seek to avoid the contradictions which develop at the level of sense and imagination; but they cannot make *how* efficient causation takes place conceptually explicit. A cause is said to produce a new actuality in the effect by "reducing" a potentiality to actuality; but it is impossible to obtain a complete and distinct conceptual knowledge of this production by employing atomistic—or any essentialistic—categories.

The central, basic core of being is existence; and the act of existence is one of change, mutation, and dynamism. Existence, however, is never found without essence: essence is its mode or manner of acting. As existence is viewed under the direction of its essence, it is a tendency to one thing rather than to another. Isolation and limitation are the products of essence, but the isolation of things can be partially overcome as existence permeates essence and reveals itself in tendency. This is the metaphysical recognition of what logic now recognizes as

[15]Any attempt to avoid our criticism by pointing to a difference between *acting* and *action* and between *suffering* and *passion* does not seem satisfactory to us. As a matter of fact, the insufficiency of such an attempt is an important aspect of the point which we are attempting to make. In such a proposed solution, *action* and *passion* are held to be "formalizations of reality"; they are said to be univocal, formalized, essentialistic conceptions of the participial forms, *acting* and *suffering*. But insofar as these essentialistic concepts resemble static forms, they do not correspond to the real, basic datum; that is, dynamic acting and suffering. The participial forms, *acting* and *suffering*, have a more immediate correspondence to the extramental reality intended and are accordingly admitted to be analogous in nature, but they are not categorical predicates.

It is precisely the lack of correspondence between the (on this view) acknowledged analogous nature of *acting* and the univocal nature of *action*—when there is only one proper object intended—to which we wish to call attention. To the extent that action and passion are considered univocal in their conceptualistic representation, to that extent their conceptualistic representation is misleading. Action and passion seem to have too close an association with the existence of a thing to admit of any proper univocal representation.

"dispositional predicates." To say that a thing has a certain disposition is to say that its act of existence must manifest itself in one way rather than in another.

We believe that a recognition and development of the concept of tendency will not make the *manner* of efficient causation conceptually precise, but it will relegate the problem to the order of existence rather than to that of essence. This is where it should be in an existential metaphysics, for it is the efficient cause which is concerned with existence. Once it is relegated to this order, its conceptual difficulties will at least not seem anomalous or surprising, for existence itself is discovered not to allow the type of conceptual nicety that we desire. Despite the fact that it cannot be perfectly conceptualized, existence and its manifestation in efficient causation must be granted a central role in reality, for its presence can be established by a fundamental analysis of experience. The difficulties of our manner of knowing are not held to affect the nature of the thing known.

The final consequence of an emphasis on essence and form, rather than on existence, has been that the Aristotelian tradition as a whole has classified action and passion as two of the univocal categories. It is here that we find the classical exposition of the doctrine of efficient causation most deficient, and it is here that much contemporary exposition does not seem to go as far as its existential emphasis demands.

Action is said to be the mode of causation of an efficient cause; it is the causality an efficient cause exercises. Passion is the corresponding receptivity of the effect. These two concepts have always been included in the list of highest genera. If the foregoing analysis of tendency and its relation to the act of existence is correct, however, tendency and its manifestation in efficient causation must have the same characteristics as those of existence. Tendency and the action of efficient causation are manifestations of being which cannot be contained in a univocal genus or category. Passion, it appears, must be accorded like treatment inasmuch as it is the correlative notion of action and insofar as it is properly identified with the existential and dynamic aspect of being. This means that action and passion must be analogical in nature, not univocal.[16] Just as the existence of one thing is not the same as that of another thing, so the tendencies and

efficient causation of one thing are not exactly the same as those of any other thing. Complete disparity is not found here, however, for as the existence of different essences stands in a similar relation to these essences, so the action directed by different essences stands in a similar relation to these essences.

The results of different causal actions may be the actualization of a univocal form, but the form actualized is not the same as the *manner* in which it is actualized. Aristotle said that the agent is always the vehicle of some form. It seems to be a continuing essentialistic concern for the form, rather than the existential vehicle which carries it, that allows the Aristotelian tradition still to classify the action and passion of efficient causation as categories.

Joseph Owens, C.SS.R.

THE CAUSAL PROPOSITION—PRINCIPLE OR CONCLUSION?

The first part of this article was published in THE MODERN SCHOOLMAN, *January, 1955, pp. 159-71.*

VI The Argument from Participation

This is the way, however, which St. Thomas Aquinas, in an article often quoted throughout the present controversy, as well as in innumerable other places, might seem to indicate for the solution of the problem.[87] It is the way, moreover, that has been followed during the last twenty years by the most prominent among those who seek to base their efforts on the text of St. Thomas. It consists in developing the argument from the notion of participated being, in accordance with the much cited text:

> . . . although the relation to a cause does not enter the definition of a being which is caused, nevertheless it follows from what pertains to its notion [*ratio*]; for from the fact that by participation something is being, it follows that it is caused by another. Hence such a being cannot be, unless it be caused, just as man cannot be, unless he be a risible thing.[88]

This should mean that "caused being" follows in formal sequence upon "participated being," just as "risible" follows upon "man," so that a being cannot be understood as participated without thereby being understood as caused.

VII Difficulties in Justifying the Principle of Causality by the Doctrine of Participation

But in this case can the causal proposition any longer be considered a "principle" in the epistemological signification of this word? Secondly, how is the doctrine of participation itself to be established?

The earlier Neo-Scholastics, in accordance with the Leibnizian back-

ground in which they approached the question, meant the causal proposition to be a "principle" in the sense that it could not be established by a strictly demonstrative process.[89] But in the argument based on participation does not "participated being" function as a true middle term? How could the notion of "participated," any more than that

[87]*ST*, I, q. 44, a. 1. Elsewhere, for example: "Omne autem participans aliquid accipit id quod participat ab eo a quo participat, et quantum ad hoc, id a quo participat est causa ipsius . . ." (*De Sub. Sep.*, cap. 3; ed. J. Perrier [Paris: Léthielleux, 1949], No. 15). A long list of the principal texts and typical formulae in which St. Thomas makes "caused" follow from "participated" being may be found in C. Fabro, *Rivista di Filosofia Neoscolastica*, XXVIII (1936), 132-33.

[88]"Dicendum, quod licet habitudo ad causam non intret definitionem entis quod est causatum, tamen sequitur ad ea qua sunt de eius ratione; quia ex hoc quod aliquid per participationem est ens, sequitur quod sit causatum ab alio. Unde huiusmodi ens non potest esse, quin sit causatum: sicut nec homo, quin sit risibile . . ." (*ST*, I, q. 44, a. 1 ad 1).

Cf.: "Ammesso il postulato della possibilità reale dell'essere partecipato, il principio: 'ex hoc quod aliquid non est per se, est per aliud' . . . va riconosciuto come valido, necessario, ed universale: da questo segue immediatamente ed è fondata anche quello di causalità" (C. Fabro, *Rivista di Filosofia Neoscolastica*, XXVIII [1936], 140). "Grâce à l'idée de participation qu'il enveloppe nécessairement, il est impossible de l'identifier et de ne pas s'appercevoir qu'il se réfère à un autre par lequel il est" (A. Marc, *Dialectique de l'affirmation* [Paris: Desclée, 1952], p. 438). "Par cette distinction nous attendions préparer la démonstration de la valeur absolu du principe de causalité, en l'appuyant sur les principes généraux de la participation" (L.-B. Geiger, *La participation dans la philosophie de S. Thomas d'Aquin* [Paris: Vrin, 1942], p. 475). These general principles, Geiger notes, are taken from the order of formal causality, and so his demonstration claims to involve no begging of the question. "Cette pétition de principe existerait, si *per aliud* avait nécessairement la signification propre à l'ordre de la cause efficiente. Si au contraire on lui donne le sens général et surtout negatif de *ce qui n'est pas fondé sur l'essence d'un être*, on se meut dans le domaine de la cause formelle. *Per aliud* est synonyme de *per accidens* ou de *per participationem*" (*ibid.*). Does not this procedure indicate quite clearly a leap from the order of formal causality to that of efficient cause; that is, from the order of form to that of existence?

The example of the proper accidents, as "risible" with regard to "man," implies a connection so close that the one term cannot be understood to be without the other. ". . . tria sunt genera accidentium; quaedam enim causantur ex principiis speciei, et dicuntur propria, sicut risibile homini . . . Sed species non potest intelligi sine accidentibus quae consequuntur principium speciei . . ." (St. Thomas, *De An.*, a. 12 ad 7). This may be seen in the case of the soul's faculties: "Potentiae vero animae sunt accidentia sicut proprietates. Unde licet sine illis intelligatur quid est anima, non autem animam sine eis esse est possibile neque intelligibile" (*ibid.*).

[89]"Ma ciò che importa notare è l'accordo di tutti nel punto veramente fondamentale della questione . . . Benchè si separino in altri punti, e seguano processi assai diversi, tutti s'accordano nel dire che noi *apprendiamo* e non *argumentiamo*, che l'ente che incommincia è effetto" (Vinati, *4e congrès international des catholiques*, p. 658).

[40]*Physics* vii. 1. 241b24; viii. 4. 256a2-3. Cf. *ibid.*, 1. 242a15-19. Even in a self-movent, the movent part must in some way be other than that which is being moved (*ibid.*, viii. 5. 257a27-b13).

[41]"In hac autem probatione sunt duae propositiones probandae: scilicet, *quod omne motum movetur ab alio* . . ." (*CG*, I, cap. 13; ed. Leonine, XIII, 30b5-7).

of "caused," be considered to be immediately evident in the notion of "contingent being," as this latter notion is taken from the things of the sensible universe? It is a notion considerably different from that of "contingent," and when used as a middle term it seems to make the process a strict *demonstration*. The causal proposition would become a *conclusion* from other premises instead of being epistemologically a first principle.

There is some *prima facie* evidence, however, that the causal proposition was regarded by St. Thomas Aquinas as the conclusion of a rigorous demonstration. In the Aristotelian treatises efficient causality had been strictly related to motion. The causal proposition in this tradition took the form "Whatever is being moved is being moved by something" or "by another," the movent being in some way "other" than the thing that is being moved.[40] In demonstrating the existence of God, St. Thomas requires that this proposition be *proved*.[41] One

---

Cf.: "Primo quidem constituens et ratione et exemplis omne quod movetur ab alio moveri . . ." (*De Sub. Sep.*, cap. 2; ed. Perrier, No. 8).

The *prima via* (*ST*, I, q. 2, a. 3) is based upon the analysis of the motion in the sensible world into act and potency, which are seen as evidently different one from another. The reasoning in its essential lines is as follows: A thing that is being moved is being moved by something in act ("de potentia autem non potest aliquid reduci in actum, nisi per aliquod ens actu"); but this thing in act is something other than the thing that is being moved ("impossibile est ergo quod . . . aliquid sit movens et motum"); therefore the thing that is being moved is being moved by something other than itself. The minor premise is established by seeing in the mobile thing, through considering its different states, the distinction between act and potency. But the major premise is merely stated as a fact and illustrated with the usual example of fire and heat. Is it *per se* evident? Hardly. " 'Non passa cosa alcuna dalla potenza all'atto se non per qualche cosa già in atto.' . . . rivela essa immediatamente la dipendenza causale? Sembra di no: così come è enunziata nel soggetto si vede indicate piuttosto il fatto, sia pure un fatto metafisico, del passaggio; ma l'ulteriore esigenza sembra venga aggiunta per ulteriori considerazioni" (C. Fabro, *Rivista di Filosofia Neoscolastica*, XXVIII [1936], 122-23). Does the regular example of participation—namely, fire and heat—indicate that the major premise, just as in the commentary on the *Physics* (cf. *infra*, n. 42), is being accepted on the strength of the participation doctrine? Is participation required as a middle term to prove that premise? Certainly the actuation of a potency is explained elsewhere by St. Thomas as participation: "Omne quod est actu, vel est ipse actus, vel est potentia participans actum" (*Quodl.* III, a. 1); ". . . unumquodque quod est in potentia et in actu, fit actu ex hoc quod participat actum superiorem" (*ibid.*, XII, a. 5). Participation, accordingly, has been seen as a principle of *demonstration* in the proof from motion: "Les preuves de l'existence de Dieu, celle qui prend son point de départ dans le mouvement comme celle qui s'appuie sur les degrés des êtres, font appel à la participation. . . . La participation y

of the Aristotelian justifications of the proposition, moreover, is described by him as a *propter quid* demonstration[42] and as an argument which has induced a "conclusion."[43] *Propter quid* demonstration is demonstration in the strictest sense of the word, demonstration from premises that are prior in the fullest logical and epistemological sense.

---

intervient au titre de principe de démonstration" (L.-B. Geiger, *La participation*, p. 15. Cf. *ibid.*, n. 2).

If this be true, the texts (for example, ". . . omne novum oportet quod habeat aliquam causam" [*CG*, III, cap. 89; ed. Leonine, XIV, 273b11-12]) in which St. Thomas makes the contingence of sensible things require that they be caused have to be interpreted as having their force from the participation of act by potency. ". . . omne quod de novo fit, ab aliquo innovatore oportet sumere originem; cum nihil educat se de potentia in actum, vel de non esse in esse" (*CG*, I, cap. 13; ed. Leonine, XIII, 33b16-19). ". . . si esse incipiat, indiget aliquo quod sit ei causa essendi; nihil enim seipsum educit de potentia in actum, vel de non esse in esse" (*Comp. Theol.*, cap. 7). Bersani observes that it is not the contingence but the *reception* of act that establishes the thing as caused: ". . . patet, secundum Angelicum, nos non posse apprehendere effectum ut dependentem, nisi quatenus ipsum apprehendimus ut terminum actionis, scil. motus. Non, ergo, ex hoc quod incipit, vel ex hoc quod est contingens: sed bene ex hoc quod patitur, seu recipit" (*Divus Thomas* [Piacenza], Ser. 3, 1 [1924], 160.)

[42]". . . sed videtur dicendum quod non sit demonstratio *quia*, sed *propter quid;* continet enim causa quare impossibile est aliquod mobile movere seipsum" (*In VII Phys.*, lect. 1, No. 6; in *Opera Omnia*, ed. Leonine, II, 323b). This "cause" is that there can be no *primum mobile*, on account of the divisibility of everything mobile; and in virtue of the principle "quod est primum in quolibet genere est causa eorum quae sunt post" only the primary instance of mobile things could be the cause of motion to itself (*ibid.*). The conclusion here is restricted in Aristotelian fashion to the cause of sensible motion. It is negative in form: no mobile thing can move itself. Yet it is understood by St. Thomas as a positive proof of the proposition "omne quod movetur ab alio movetur" (*ibid.*, No. 3, pp. 322-23). What St. Thomas quite apparently has in mind is the Aristotelian (*Physics* viii. 5. 257b8-9; cf. *ibid.*, iii. 1. 201b4-5) conception of motion as an imperfect act. Such an act would have to be caused, in accordance with the participation principle just cited, by perfect or primary act; just as divisible being cannot have a primary instance of *divisible being* but has to be caused by the primary instance of *being*. As far as *cogency* is concerned, therefore, the conclusion might just as easily have been worded that whatever is being moved is being moved primarily by something immobile.

Here, as elsewhere, no proof of the participation principle itself is given. It is merely illustrated by the example of fire and heat. But in the structure of the argument as a whole, St. Thomas expressly distinguishes the *per se* evident starting-point from what is *concluded*: "Et hoc accipit quasi per se notum. Ex hoc autem ulterius concludit . . . Hoc autem supposito, concludit . . . Et quod hoc sequatur ex praemissis, sic probat" (*In VII Phys.*, lect. 1, No. 3).

[43]"Non requiritur ergo ad veritatem conclusionis inductae . . ." (*CG*, I, cap. 13; ed. Leonine, XIII, 31a26-27).

[44]"It is not a postulate nor a premiss, but a conclusion, and as such is reached by a certain procedure" (L. O. Wolf, "The Principle of Causality from the Metaphysical Point of View," *Proceedings of the American Catholic Philosophical Association*, VI [1930], 26). The "procedure" (*ibid.*, pp. 26-28), however, does not differ from the ordinary Neo-Scholastic analytical reduction to the principle of contradiction.

[45]". . . il n'y a point de pétition de principe dans la démonstration proposée"

Besides, at today's distance from the Leibnizian background of the earlier Neo-Scholastics, the causal proposition may be designated as the conclusion of a demonstration without giving the appearance of too much novelty. The proposition has, in fact, been referred to in orthodox circles as a *conclusion* in contradistinction to a premise[44] and as a subject for *demonstration.*[45] The question in this regard is rather how strictly the notion of demonstration is intended.

The second difficulty, on the other hand, appears to be much more baffling. Does St. Thomas anywhere justify the doctrine of participation, except by saying that Plato and Aristotle are in agreement upon it and by pointing to the illustrations of fire and heat, light, or whiteness,[46] or to the general order of things?[47] Yet the doctrine of participation is far from self-evident. It seems rather to be the result of a long philosophical study.[48] St. Thomas is well aware, moreover, that the

---

(L.-B. Geiger, *La participation,* p. 475; cf. text *supra,* n. 38).

A. Little, in *The Platonic Heritage of Thomism* (Dublin: Golden Eagle Books, 1951), pp. 152-68, expressly means his demonstration of the principle of causality to be "a proof *propter quid*" (p. 163). It is based on the doctrine that the possibility of contingent things is a *reality* prior to their actual existence. This possibility comprises (p. 166), besides noncontradiction, the element of existibility. ". . . the existibility of the possible is a reality verified *of* the possible but not *by* the possible; for to be verified or real it must be made real by an actual existence, which the possible by definition lacks" (p. 165). To accept this reasoning, one would have to admit some *reality* in the essence or possible prior to its reception of existential act. For a critique of the argument, cf. review by J. Horgan, *Philosophical Studies* (Maynooth), II (1952), 91-92. Father Horgan himself maintains the principle of causation as both principle and conclusion: "Although the principle of causation is a first principle of knowledge and so not capable of direct proof, it is nevertheless capable of indirect proof through the principle of contradiction . . ." ("The Proof for the Existence of God," *Philosophical Studies,* I [1951], 51). Yet in establishing the contradiction he makes the principle in its absolutely universal expression equivalent to the *conclusion* of the proof for the existence of God: "For the proof of the principle is the proof that the world is contradictory except as dependent on an Infinite First Cause" (*ibid.,* p. 53; cf. same article in *ibid.,* II [1952], 71). In this way it is "a conclusion rather than a principle . . ." (*ibid.,* II, 66, n. 10).

[46]E.g., *In Lib. de Causis,* lect. 3; ed. Mandonnet, *Opuscula,* I, 209. *ST,* I, q. 44, a. 1. *De Sub. Sep.,* cap. 3; ed. Perrier, No. 15, etc. Cf. L.-B. Geiger, *La participation,* pp. 16-19.

[47]"Adhuc, si quis ordinem rerum consideret semper inveniet id quod est maxime semper causam eorum esse quae sunt post ipsum . . ." (*De Sub. Sep.,* cap. 7; ed. Perrier, No. 50).

[48]"Ce qui fait le propre de la position de S. Thomas c'est que cette participation n'est jamais pour nous l'objet d'une intuition simple. Elle n'est pas le point de départ de la philosophie, elle en est le terme" (L.-B. Geiger, *La participation,* p. 451).

Aristotelian metaphysics involves the denial of the Platonic doctrine of participation.[49] He uses the examples of the Platonic participation hypothetically, "If whiteness subsisted . . ."[50] The Aristotelian illustrations of fire and heat would have to be used today just as hypothetically, "If fire were one of the four original elements of the things in the sub-lunar world." Even in this case, moreover, fire cannot be a separate form, as would be required by the Platonic doctrine of

[49]"Unde Aristoteles ostendens quod ideae ad nihil possunt sensibilibus utiles esse, destruit rationes Platonis de positione idearum" (*In I Metaphys.*, lect. 15 [Cathala No. 225]). "Relinquitur ergo, quod non oportet ponere aliquam speciem praeter singularia, quae sit causa speciei in generatis, ut Platonici ponebant" (*In VII Metaphys.*, lect. 7 [Cathala No. 1435]).

[50]For example: *ST*, I, q. 44, a. 1; in *Lib. de Causis*, lect. 3. Cf.: ". . . si calor esset calor per se existens . . ." (*In I Metaphys.*, lect. 10 [Cathala No. 154]). "Unde si diaphaneitas esset forma separata per se subsistens . . ." (*De An.*, a. 6 ad 3). ". . . si esset aliqua lux separata . . ." (*Quodl.*, II, a. 3).

[51]Cf. texts from *Quodl.* III, a. 1, and XII, a. 5, *supra*, n. 41; and: ". . . cum . . . sint participantes secundum Platonem, necesse est quod omnes sint compositae ex potentia et actu; quod etiam necesse est dicere secundum sententiam Aristotelis" (*De Sub. Sep.*, cap. 3; ed. Perrier, No. 16).

[52]It is difficult to find a satisfactory definition of participation in St. Thomas. "Est autem participare, quasi partem capere; et ideo quando aliquid particulariter recipit id quod ad alterum pertinet universaliter, dicitur participare illud" (*In de Hebd.*, cap. 3; ed. Mandonnet, *Opuscula*, I, 172). On this Geiger comments: "S. Thomas y donne une définition générale de la participation, la seule qui, à notre connaissance, existe dans ses écrits" (*La participation*, p. 48). G. Isaye, in "La théorie de la mesure et l'existence d'un maximum selon S. Thomas," (*Archives de philosophie* [Paris], XVI [1940], 12), gives as a definition: ". . . *participare* nihil aliud est quam ab alio partialiter accipere" (*In II de Caelo*, lect. 18; ed. Leonine No. 6). Cf. also: "Quod vero non totaliter est aliquid, habens aliquid aliud adjunctum, proprie participare dicitur" (*In I Metaph.*, lect. 10 [Cathala No. 154]). These texts signalize the opposition between the universal and the particular, indicating the origin of the question in the problems of predication. The first two texts contain, but in a secondary way, the notion of reception as from a cause.

[53]"Unde secundum opinionem Platonis non erat aliquod accidens species separata, sed solum substantia: et tamen secundum rationem sumptum ex scientiis oportebat quod esset species etiam accidentium, ut dictum est" (*In I Metaph.*, lect. 14, [Cathala No. 220]).

[54]"Causa autem prima secundum Platonicos quidem est supra ens inquantum essentia bonitatis et unitatis, quae est causa prima, excedit etiam ipsum ens separatum, sicut supra dictum est: sed secundum rei veritatem causa prima est supra ens inquantum est ipsum esse infinitum; ens autem dicitur id quod finite participat esse . . ." (*In Lib. de Causis*, lect. 6; ed. Mandonnet, *Opuscula*, I, 229-30). On the difference between the Aristotelian separate form and any sensible nature, cf. J. Owens, *The Doctrine of Being in the Aristotelian* Metaphysics (Toronto: Pontifical Institute of Mediaeval Studies, 1951), pp. 291-92. On St. Thomas's conception of the "Platonic" participation, cf. Geiger, *La participation*, pp. 85-120.

[55]Cf.: "Exemplum autem videtur pertinere ad causas formales, in quibus quanto forma est universalior, tanto prior esse videtur" (*In Lib. de Causis*, lect. 1; ed. Mandonnet, *Opuscula*, I, 197). "Et si quidem ad genera causarum quaestio referatur, manifestum est quod habet veritatem in quolibet genere causarum suo

participation. It is a form that can be only in designated matter. Yet St. Thomas quite blandly explains the Aristotelian doctrine of act and potency in the Platonic language of participation, and likewise the Platonic participation in terms of act and potency.[51]

Besides, participation, both in its original Platonic (and Pythagorean) setting, as well as when carried over into the Aristotelian act and potency, should be a doctrine of *form*. It means that all particular instances of a form are caused by that form considered in the fullness and universality of its perfection.[52] So predication was explained. This doctrine is comparatively easy to understand in the realms of predication and of exemplar causality. But what justifies its transference to the order of efficient cause? For St. Thomas as well as for Aristotle the particular instances of a form are not caused efficiently by that form subsisting in its universality. No such universal could subsist for the exercise of that causality. In what is of its nature an accidental form, the separation would substantize the accident and to that extent destroy its very nature.[53] Likewise, no sensible substantial form can be separated from matter without destroying its nature. A form, when established as separate, appears as a form different in nature from any form in the sensible order. An Aristotelian act that has its being separately must be of a *nature* different from that of any act found in a potency. St. Thomas, accordingly, realizes full well that the Neo-Platonic doctrine of the participation of being places the first cause of being above (and so outside) the order of being. But contrary to the norms of the Aristotelian critique, St. Thomas maintains that both types may be truly said to be—the first cause is infinite being, the particular type is finite being.[54] The causality according to which the participation now takes place is primarily efficient causality.[55] How can St. Thomas so completely transform the Greek doctrine of participation by bringing it over to the order of efficient cause? Does he

---

modo. Et in causis quidem formalibus, exemplum inductum est. . . . Ostendit idem esse et in efficientibus causis. Manifestum est enim quod quanto aliqua causa efficiens est prior, tanto ejus virtus ad plura extendit. Unde oportet ut proprius effectus ejus communior sit; causae vero secundae proprius effectus in paucioribus invenitur, unde et particularior est. Ipsa enim causa prima producit vel movet causam secundo agentem, et sic fiat ei causa ut agat. Inveniuntur praedicta tria, quae tacta sunt, primordialiter quidem in causis efficientibus, et ex hoc manifestum est quod derivatur ad causas formales . . ." (*ibid.*, pp. 198-99).

mean that to be is an act that does not come under the norms that apply to the participation of *form*? If so, how can the Thomistic doctrine of participation be justified by a mere appeal to the Platonic and Aristotelian doctrines and examples? Is it not something radically new, based upon the Thomistic notion of efficient causality rather than on any Greek foundation? If this is the case, does not participation follow upon efficient causality, instead of efficient causality following upon participation?

In point of fact, the article cited from the *Summa Theologiae*[56] seems to presuppose that the doctrine of participated being is ultimately based upon efficient causality. True, it reasons that God alone is essentially being, and so all other things participate being from God and are therefore caused by God. But for the proof that God is subsistent being, it refers back to a previous article[57] which shows that if God is not His own being He would be being by participation and so would not be the primary being. The first way in which the argument is expressed in that article proceeds from the doctrine that God is the *first* efficient cause and so cannot be other than His being. The reasoning is that anything which is outside the essence of a thing must be caused either by the principles of the essence or by something extrinsic; and "to be" cannot be caused by the principles of the essence.

[56] *ST*, I, q. 44, a. 1.

[57] "Primo quidem quia quidquid est in aliquo, quod est praeter essentiam ejus, oportet esse causatum vel a principiis essentiae, sicut accidentia propria consequentia speciem, ut risibile consequitur hominem, et causatur ex principiis essentialibus speciei; vel ab aliquo exteriori, sicut calor in aqua causatur ab igne. . . . Impossibile est autem, quod esse sit causatum tantum ex principiis essentialibus rei, quia nulla res sufficit, quod sit sibi causa essendi, si habeat esse causatum. Oportet ergo, quod illud, cujus esse est aliud ab essentia sua, habeat esse causatum ab alio; hoc autem non potest dici de Deo, quia Deum dicimus esse primam causam efficientem" (cf. *ST*, I, q. 2, a. 3, *secunda via*. Similarly, with explicit reference back to the *via* of efficient causality, *CG*, I, cap. 22; ed. Leonine, XIII, 68a48-b27). "Tertio quia sicut illud quod habet ignem, et non est ignis, est ignitum per participationem; ita illud quod habet esse, et non est esse, est ens per participationem. Deus autem est sua essentia . . . si igitur non sit suum esse, erit esse per participationem et non per essentiam. Non ergo erit primum ens, quod absurdum est dicere" (*ST*, I, q. 2, a. 4). What the *quarta via* (*ibid.*, a. 3) had proven was likewise a cause of being (*causa esse*) for all things. If the reasoning in both the first and third arguments of *ST*, I, q. 3, a. 4, is meant to be *propter quid* and if there can be only one such means to perfectly demonstrate any speculative conclusion (*ST*, I, q. 47, a. 1 ad 3), then the basic reason in both expressions of the demonstration is that all things except God have their being from another.

What belongs to a thing in such a way as to be *praeter essentiam* is of course accidental to that thing: "Quidquid est in aliquo praeter essentiam ejus, inest ei accidentaliter" (*Comp. Theol.*, cap. 66).

[58] "Set uerum est dicere quod homo in quantum est homo non habet quod sit in

Therefore the being (*esse*) of anything for which to be is other than its essence must be caused by another.

This conclusion expresses the causal proposition. It is quite evidently taken for granted in the Thomistic demonstration that God exists as well as in the proof that God has no essence apart from His being. Even though the demonstration of God's existence is based upon a particular order of causes and not on the causal proposition in its universality, nevertheless the universality and necessity of the proposition emerge from that demonstration. But in any case, the proof is based upon efficient causality. Should not this mean, then, that the Thomistic participation is to be explained in terms of efficient causality? A thing has being by participation because it is caused efficiently and ultimately because it is so caused by essential being. How, then, can St. Thomas logically go on to say, in opposite sequence, that because a thing is being by participation it is caused by another?

VIII The Reasoning of St. Thomas Aquinas

In the compact articles of the *Summa,* no answer to these questions is immediately apparent. Nor is any effort made towards proving that to be is outside the essence of the thing. The argument merely takes for granted that to be is accidental, *praeter essentiam.* Nor is any attempt put forth to prove that since to be cannot be caused by the principles of the essence, it must be caused by something external. Merely an illustration is given, "As heat in water is caused by fire." However, the force of the argument quite clearly lies in the fact that to be is outside the essence and what follows from the essence. The proof seems to be based upon the *accidental* relation of being to all essences other than the first efficient cause.

The argument happens to be given in greater detail in the earlier *De Ente et Essentia.* There St. Thomas presents the same reasoning in the course of proving that there is potency in the separate Intelligences. He had first shown that the predicable nature of anything belonging to a genus abstracts from all the ways in which that nature is seen to be either in reality or in the mind, while at the same time it does not prescind from any of those ways in which it is able to be.[58] St. Thomas had established this after having shown that a genus

signifies indeterminately its species and a species indeterminately its singulars, and so without prescinding from any of them.[59] The doctrine, accordingly, means that no nature can be conceived unless what is conceived has in some way being, either in reality or in the mind; for the nature does not prescind from the different ways in which it may be. But according to its absolute consideration, that nature abstracts from all its different ways of being.

Is this doctrine immediately evident? Hardly. The notion of signi-

---

hoc singulari uel in illo uel in anima. Ergo patet quod natura hominis absolute considerata abstrahit a quolibet esse, ita tamen quod non fiat precisio alicuius eorum" (*De Ente*, cap. 3; ed. Roland-Gosselin, p. 26, ll. 6-10).

[59]"Sic ergo genus significat indeterminate totum id quod est in specie . . ." (*ibid.*, cap. 2; p. 16, ll. 1-2). ". . . sicut id quod est genus prout predicatur de specie implicabat in sua significatione, quamvis indistincte, totum quod determinate est in specie, ita eciam et id quod est species, secundum quod predicatur de indiuiduo, oportet quod significet totum illud quod est in indiuiduo essentialiter licet indistincte . . ." (*ibid.*, p. 20, ll. 14-19. Cf. *De Ver.*, q. 21, a. 1).

[60]*De Ente*, cap. 3; p. 12, l. 5 - p. 14, l. 11.

[61]"Hec autem natura habet duplex esse, unum in singularibus et aliud in anima . . . Et tamen ipsi naturae secundum primam considerationem suam, scilicet absolutam, nullum istorum esse debetur. Falsum enim est dicere quod essentia hominis, in quantum homo, habeat esse in hoc singulari; quia si esse in hoc singulari conueniret homini in quantum est homo, et numquam esset extra hoc singulare; similiter eciam si conueniret homini in quantum est homo non esse in hoc singulari, nunquam esset in eo" (*ibid.*, p. 25, l. 9 - p. 26, l. 6).

[62]"Quicquid enim non est de intellectu essentie uel quiditatis hoc est aduenies extra et faciens compositionem cum essentia . . ." (*ibid.*, cap. 4; p. 34, ll. 7-9). On *adveniens* as a term for "accident," cf. Geiger's vocabulary of participation: ". . . *ab extrinsico adveniens*, ou simplement *adveniens*, *adjunctum* . . . Il est certain . . . que ces dernières sont comme l'ébauche de l'analyse systématique des relations entre un être quelconque et ce qu'on lui rapporte *per aliud*. Ce qui est *per aliud*, à le prendre comme tel, est en effet nécessairement *étranger* à l'essence de l'être à qui on l'attribue ou avec qui il est mis en relation" (*La participation*, p. 459; cf. pp. 460-69).

[63]". . . nulla essentia sine hiis que sunt partes essentie intelligi potest. Omnis autem essentia uel quiditas potest intelligi sine hoc quod aliquid intelligatur de esse suo; possum enim intelligere quid est homo uel fenix et tamen ignorare an esse habeat in rerum natura. Ergo patet quod esse est aliud ab essentia uel quiditate" (*ibid.*, ll. 9-15). Hence the *esse* cannot be an essential note. Cf.: ". . . aliquid participatur dupliciter. Uno modo quasi existens de substantia participantis, sicut genus participatur a specie. Hoc autem modo esse non participatur a creatura; id enim est de substantia rei quod cadit in ejus definition. Ens autem non ponitur in definitione creaturae, quia nec est genus nec differentia; unde participatur sicut aliquid non existens de essentia rei . . ." (*Quodl.* II, a. 3).

[64]The new being which a nature acquires when it is known does not make it exist in itself but only in another; that is, in the knowing subject. ". . . nec tamen ens est in eo secundum esse naturale" (*De Ver.*, q. 21, a. 1). This new being is the being of a cognitional *species;* that is, of an accident which inheres in the cognitive faculty. ". . . secundum quod habet esse in hoc intellectu uel in illo est quedam species particularis" (*De Ente*, cap. 3; p. 28, ll. 14-15).

fying something without prescinding from something else that goes with it had first to be established by a comparison of the different significations which the term "body" may have. In the signification which does not prescind from further specific perfections, "body" is seen to be a predicable generic nature.[60] Then a predicable nature is compared with the different ways in which it is seen to be, in reality and in the mind; and it is seen to abstract from all these ways in its absolute consideration.[61] The conclusion is then drawn that the nature in its absolute consideration abstracts from every way in which it is able to be, without prescinding from any of those ways. The examination of the *nature* just in itself, therefore, does not yield this conclusion. The nature had first to be compared with the different ways in which it is seen to be and then with the notion of abstraction without precision, a notion obtained from that comparison and from the study of the relations of the genera and species and singulars.

With this doctrine established, St. Thomas proceeds to show first that to be is accidental (*adveniens extra*) to the nature of things and secondly that it enters into composition with that nature.[62] He begins by noting that every essence or quiddity can be understood without any knowledge of its own being (*esse*); for one can understand *what* a man or a phoenix is and at the same time not know whether it has being (*esse*) in reality. Since no essence can be understood without knowledge of the essential parts, he draws the conclusion that for a things to be is *other* than its essence or quiddity.[63]

This means that to know *what* a thing is, is to know its essential parts; namely, its genus and difference. These are taken respectively from its matter and form, though neither is the same as the matter or the form. In that knowledge is not included the knowledge of whether or not the thing has being in the real world. Such being in the real world is the being proper to the nature, *esse suum*. The being which the essence has in the mind while it is being considered is not taken into consideration. Apparently it is not looked upon as the being which pertains to the thing as its own. But to be in the way to which the thing by its nature is primarily adapted[64] is also not contained in the essence of that thing.

The doctrine is established by the express consideration of only a

couple of natures, man and phoenix. It is now universalized, with one possible exception. That possible exception would be a thing whose very nature is to be. Such a being would be unique and primary. It could not be multiplied formally; for then it would no longer be sub-

[65]"Nisi forte sit aliqua res cuius quiditas sit ipsum suum esse. Et hec res non potest esse nisi una et prima, quia impossibile est quod fiat plurificatio alicuius nisi per additionem alicuius differentie; sicut multiplicatur natura generis in species uel per hoc quod forma recipitur in diuersis materiis, sicut multiplicatur natura speciei in duersis indiuiduis, uel per hoc quod est unum absolutum et aliud in aliquo receptum, sicut si esset quidam calor separatus, esset aliud a calore non separato ex ipsa sua separatione" (*De Ente,* cap. 4; p. 34, ll. 15-24). Cf. also *ibid.,* ll. 24-32, and *Comp. Theol.,* cap. 15. Any formal determination would make the thing a *habens esse;* cf. ". . . quia tamen quaelibet forma est determinativa ipsius esse, nulla earum est ipsum esse, sed est habens esse" (*In de Hebd.,* cap. 2; ed. Mandonnet, *Opuscula,* I, 176).

[66]"Substantiarum uero quedam sunt simplices et quedam composite, et in utrisque est essentia. Set in simplicibus ueriori et nobiliori modo secundum quod esse nobilius habent; sunt enim causa eorum que composita sunt, ad minus substantia prima que Deus est" (*De Ente,* cap. 1; p. 5, l. 6 - p. 6, l. 1).

[67]"Omne autem quod conuenit alicui uel est causatum ex principiis nature sue, sicut risibile in homine, uel aduenit ab aliquo principio extrinsico sicut lumen in aere ex influentia solis. Non autem potest esse quod ipsum esse sit causatum ab ipsa forma uel quiditate rei, causatum dico sicut a causa efficiente, quia sic aliqua res esset causa suiipsius et aliqua res seipsum in esse produceret, quod est impossibile. Ergo oportet quod omnis talis res cuius esse est aliud quam natura sua habeat esse ab alio" (*ibid.,* cap. 4; p. 35, ll. 3-11). This conclusion is later worded as: ". . . cum omnis res que non est esse tantum habeat causam sui esse, ut dictum est" (*ibid.,* ll. 15-16). Similarly in the *Summa*: "Oportet ergo, quod illud cuius esse est aliud ab essentia sua, habeat esse causatum ab alio . . ." (*ST,* I, q. 3, a. 4). Cf. also *CG,* I, cap. 22; ed. Leonine, XIII, 68b1-23. The *esse* in this case quite evidently refers to actually exercised existence. It can, accordingly, be the starting-point in the *De Ente* for the positive proof that God exists.

[68]*ST,* I, q. 3, a. 4 (text *supra,* n. 57). Similarly, *CG,* I, cap. 22; ed. Leonine, XIII, 68b1-23.

[69]"Patet ergo quod intelligencia est forma et esse et quod esse habet a primo ente quod est esse tantum, et hoc est causa prima que Deus est. Omne autem quod recipit aliquid ab aliquo est in potentia respectu illius, et hoc quod receptum in eo est est [*sic*] actus eius" (*De Ente,* cap. 4; p. 35, ll. 16-21).

[70]*Ibid.,* p. 35, l. 23 - p. 36, l. 37. Cf.: "Et quia omne quod non habet aliquid a se, est possibile respectu illius; hujusmodi quidditas cum habeat esse ab alio, erit possibilis respectu illius esse . . . et ita in tali quidditate invenietur potentia et actus, secundum quod ipsa quidditas est possibilis, et esse suum est actus ejus. Et hoc modo intelligo in Angelis compositionem potentiae et actus, et de 'quo est' et 'quod est' . . ." (*In I Sent.,* d. 8, q. 5, a. 2, sol.; (cf. *In II Sent.,* d. 3, q. 1, a. 1, sol.). ". . . omne quod non est suum esse oportet quod habeat esse receptum ab alio, quod est sibi causa essendi. Et ita, in se consideratum, est in potentia respectu illius esse, quod recipit ab alio; et hoc modo ad minus potentialitatem ponere oportet in Angelo, quia Angelus non est suum esse, hoc enim solius Dei est . . ." (*Quodl.,* VII, a. 7). "Quod inest alicui ab agente, oportet esse actum: agentis enim est facere aliquid actu. Ostensum est autem supra quod omnes aliae substantiae habent esse a primo agente; et per hoc ipsae substantiae causatae sunt, quod esse ab alio habent. Ipsum igitur esse inest substantiis causatis ut quidam actus ipsarum. Id autem cui actus inest, potentia est . . ." (*CG,* II, cap. 53; ed. Leonine, XIII, 391a17-b3).

sistent being but rather a form which had being. It could not be multiplied materially, for then still less would it be subsistent, since it would be in matter. Therefore only one exception is possible to the statement that to be is not included in the nature of a thing.[65]

This reasoning includes the doctrine of participation, but only hypothetically. *If* there is a thing whose nature is to be, it will be *absolute* and the *primary* instance of being, while any other instance of being will be received in something, as heat is received in something that is hot. The doctrine had already been presumed in an earlier part of the treatise.[66]

The next stage of the argument shows that whatever pertains accidentally to something is caused either by the principles of its nature, as for instance risibility in man, or else comes to it from some extrinsic principle, as light in the air from the influx of the sun. "To be" for a thing cannot be caused by its form or quiddity because the thing would be the efficient cause of itself and would produce itself in being (*esse*). Therefore everything for which to be is other than its nature must have its being (*esse*) from another.[67]

This conclusion is the causal proposition. Just as in the *Summa Theologiae*,[68] it is here established without recourse to the doctrine of participation. What now follows establishes positively that the subsistent being hypothetically mentioned in the preceding stage of the argument actually exists in reality and is the first cause of being (*esse*) to all things. Accordingly, even the Intelligences have their being (*esse*) *from* the primary being. Since then the being (*esse*) of the Intelligences is *from* another, that which receives this being (*esse*) has to be in potency to it, and this being (*esse*) is received *in* the Intelligence by way of act.[69] Therefore, the argument concludes, there is act and potency in the Intelligences and so composition of the quiddity with its being (*esse*).[70] In this way is attained the purpose of the argument as a whole; namely, to show that there is potency in the

There is no difficulty, of course, in establishing the *esse* as act. The difference between potential and actual being is readily observable. "*Esse* autem actum quendam nominat: non enim dicitur esse aliquid ex hoc quod est in potentia, sed ex eo quod est in actu" (*CG*, I, cap. 22; ed. Leonine, XIII, 68b29-31). The whole difficulty lies in showing that the form, which was the Aristotelian act, is a potency to being.

separate forms. The composition of act and potency *follows* from the doctrine that where to be is not the essence of a thing it must come *from* something else.

[To be continued]

Chronicle

The annual symposium of the Catholic Renascence Society will be held this spring in Milwaukee, Wisconsin, at the Hotel Pfister, on Easter Monday and Tuesday, April 11 and 12, 1955. The topic planned is contemporary criticism and the critics.

The annual meeting of the Metaphysical Society of America will be held at the University of Chicago on March 25-26, 1955.

Expériences mystiques en terres non-chrétiennes. **By Louis Gardet. "Sagesse et cultures." Paris: Alsatia, 1953. Pp. 177. Paper, fr. 480.**

This study, by the well-known Arabic scholar, is very important for psychology, ethics, natural theology, and the history of philosophy. An introductory section compares the experience of the self and of God. The first part is a study of mysticism in Indian and Mohammedan cultures, and a comparison of these two to Jewish and Christian mysticisms. The second part is a more detailed study of several Mohammedan mystics, Râbi'a, Bistâmi, Hallâj, Ibn al-Fârid, and of the sûfis.

Liber de Sex Principiis Gilberto Porretae Ascriptus. **Ed. by Alban Heysse, O.F.M.; rev. by Damian Van den Eynde, O.F.M. "Opuscula et Textus." Münster: Aschendorff, 1953. Pp. 36. Paper, DM 0.95.**

This revised edition (first edition, 1929) contains a new preface embodying the results of the latest scholarship; some textual improvements have been made.

Liberté et vérité. **By Professors of the Catholic University of Louvain. Louvain: Nauwelaerts, 1954. Pp. 292. Paper, $1.92.**

In the foreword, the rector of the University of Louvain, Msgr. H. van Waeyenbergh, tells how this book is a response to the theme proposed by Columbia University, "man's right to knowledge and the free use thereof." Msgr. Louis De Raeymaeker describes the ideals and the practice of Cardinal Mercier, founder of the Institut Supérieur de Philosophie. Albert Dondeyne gives a philosophical analysis of liberty and truth, their essence, their relation to each other and the faith. Jacques Leclercq writes on liberty as a moral and social value. Joseph Nuttin studies liberty and truth in the field of psychology, especially as regards university teaching. Roger Aubert takes up the liberty of a Catholic historian. Charles Moeller investigates the liberty of literary criticism. Finally, Jean Ladrière discusses the freedom of research in the field of the natural sciences.

Geschichte der Philosophie. II. Die griechische Philosophie. **2er Teil. By Wilhelm Capelle. 2d ed. Berlin: Walter de Gruyter, 1953. Pp. 144. Paper, DM 2.40.**

This volume is No. 858 in the "Sammlung Göschen." It presents the sophists, Socrates and his followers, and Plato. It is a compressed but careful account, and there is a good selected bibliography.

Dialogues avec Monsieur Pouget. **By Jean Guitton. Paris: Grasset, 1954. Pp. 258. Fr. 495.**

The content and style of this book are unclassifiable—its topics are put down as the plurality of universes, the Christ of the Gospels, the future of our race. There is in addition a series of "logia" presented according to the way in which a man's thoughts would move and change throughout a day. But many other topics are woven into the dramatic movement of the dialogues, as the problem of evil, for instance, is woven into the discussion of the plurality of worlds. The book is meant for meditative, leisurely reading.

Il quarto pioniere della Commissione Leonina, P. Clemente Suermondt, **O.P. By Giovanni Felice Rossi, C.M. Piacenza: Collegio Alberoni, 1954. Pp. 35. Paper.**

This memorial of the life, labors, and publications of the Reverend Clemente Suermondt, O.P., is written by a man long associated with the work of the Leonine Commission, himself a well-known scholar. The monograph includes a bibliography of Father Suermondt's writings, an index of the Leonine Commission's publications, and an evaluation of the critical value of the Leonine Edition.

O Estruturalismo de Eduard Spranger. **By Federico Patka. Sao Paulo: author, 1953. Pp. 98. Paper.**

This work was previously published in the *Revista Brasileira de Filosofia* (II [1952], 698-717). It is a translation of the first three chapters of the author's dissertation at the Gregorian University, entitled "Das Grundgerüst des Geistes im individuellen Seelenleben." The present selection contains a historical introduction to Spranger's thought, showing how it was connected with the reaction against purely objective, scientific psychology, and in relation to the movement of *Geisteswissenschaften*. This is followed by an

analysis of the spiritual-cultural objects as presented by Spranger and a summary of the a-priori types of activity discovered by his analysis.

The work also contains a Latin summary of the dissertation (pp. 67-81), its table of contents (pp. 85-90), and the bibliography (pp. 93-98).

Opuscula Philosophica Sancti Thomae Aquinatis. **Ed. by Raymund M. Spiazzi, O.P. Turin: Marietti Editori, 1954. Pp. xxxi + 379. Paper.**

This edition of the *Opuscula* is uniform with the recent re-edition of the works of St. Thomas by Marietti. The works included are the same ones as in the edition of Mandonnet. The text is the so-called "vulgate" text, except for the *De Ente et Essentia,* which is that established by Charles Boyer, S.J., and the *De Unitate Intellectus,* which is that established by Leo W. Keeler, S.J.

There is a general introduction summarizing the results of recent studies on the *opuscula* but not deciding any controverted points. There is a useful bibliography (pp. xxvii-xxxi); there are indices of biblical texts, authors cited, names, and subjects.

Paideia. **Vol. I. By Werner Jaeger. 3d ed. Berlin: Walter de Gruyter, 1954. Pp. 513. DM 14.80.**

This volume was first published in 1933 and appeared in a revised edition in 1935. All three volumes have been unavailable for a number of years and are being reprinted this year; the second and third volumes will be in their second edition. The present volume, covering the period from the beginnings of Greek civilization to the end of the pre-Socratics, is an unchanged reprint of the second edition.

Sancti Thomae Aquinatis Opuscula Theologica. **Vol. I, *De Re Dogmatica et Morali,* ed. by Raymund A. Verardo, O.P. Vol. II, *De Re Spirituali,* ed. by Raymund M. Spiazzi, O.P., and containing also the *Expositiones super Boetium de Trinitate et de Hebdomadibus,* ed. by M. Calcaterra, O.P. Turin: Marietti Editori, 1954. Vol. I, pp. xviii + 531; Vol. II, pp. xi + 441. Paper.**

This new edition contains the same selection of works as the Mandonnet edition, except the *Expositio super Librum de Causis,* the *Expositio super Dionysium de Divinis Nominibus,* and the *Sermo de Festo Corporis Christi,* which Marietti has published (or will publish) separately. The text is the

so-called "vulgate" text of the principal editions, corrected in some particular instances against better editions. The commentary on the *De Trinitate* is said to list the variations of the text edited by Wyser from the autograph, but this is true only in a limited number of cases.

The present edition supplies useful introductions to the *opuscula* and to each individual work. There are good bibliographies. The general introduction (I, xiv-xv) gives a very useful table of Piana, Parma, and Mandonnet numbering of the *opuscula*. There are also useful indices.

Psychologie. **By Régis Jolivet and Jean-Pierre Maxence. "Manuel de Philosophie," I. Paris: Vitte, 1953. Pp. 480.**

This set of manuals is prepared for candidates for the bachelor's degree. The authors try to cover the material required for the examinations and at the same time to build up a philosophical spirit and habit in the students. They disclaim the self-sufficiency of the manual and assert the necessity of an active teacher.

The present text studies the cognitive and affective activities of man, and the empirical subject (the "metaphysical" subject being left to metaphysics). In the study of cognitive activities, a beginning is made with "habit"; then come studies on perception, imagination, ideas, memory, attention, abstraction, judgment, reasoning, language, and the activity of knowing. In the study of affectivity, there is a study of tendency itself, of the intentionality of tendency, pleasure and pain, and liberty. The final chapter treats of personality.

The text is divided into extremely small bits with elaborate subdivisions, and too much material seems to be included. Many authors are referred to. The artificial division between the "metaphysical subject" and the empirical subject and his activities seems very unfortunate.

Die Objektivität der Werterkenntnis bei Nicolai Hartmann. **By Emmanuel Mayer, O.F.M. "Monographien zur Philosophischen Forschung", Band VIII. Meisenheim am Glan: Westkulturverlag, 1952. Pp. 159. DM 12.80; paper, DM 10.50.**

This work was originally presented as a doctoral dissertation at the Antonianum (Rome). The investigation begins with a study of the knowledge of value and its problems: certainty, truth, apriority, and primacy. In the second part, the author considers Hartmann's proof of the objectivity of values as well as his refutation of opposed theories. This proof rests on Hartmann's metaphysical theory of knowledge (identity of subject and

object), on the interpretation of the consciousness of value, and on the essential structure of value itself. In his summary, the author considers that Hartmann's proof of the objectivity of value is good in itself and also approves the partly emotional character of the knowledge of value. He critically weighs the excessive emotionalism and the apriorism of Hartmann's theories, and finds his criteria of truth and certainty insufficient.

***Bibliographie blondélienne*, 1888-1951. Under the direction of André Hayen, S.J. Bruxelles: L'édition Universelle; Paris; Desclée de Brouwer, 1953. Pp. 93. Paper.**

This bibliography, now published in the "Museum Lessianum," was first published in the review, *Teoresi.* It is divided into three parts. The first section is chronological, and its purpose is to enable the student of Blondel to discover the development of his thought and the atmosphere in which it occurred. The second part is an analytical index to the works of Blondel. The third is an index to the authors who have written about Blondel or the movements connected with him. Because of its completeness this is a very valuable bibliography.

***Jaspers' Metaphysics.* By Adolph Lichtigfeld. Foreword by Karl Jaspers. London: Colibri Press, Ltd., 1954. Pp. 120. 10/6.**

This book is based for the most part on Jaspers's *Philosophie,* and the German thinker acknowledges it as a useful summary. The author maintains that only Jaspers succeeded in perfecting the Kantian analysis of knowledge and reality by his notion of transcendent being as limit. The arrangement of topics in this work is almost the same as that of the original which it studies, though there are also cross references to other works.

There is neither bibliography nor index.

***Morale fondamentale.* By Dom Odo Lottin, O.S.B. "Bibliothèque de théologie," (Série II. "Théologie morale," Vol. I.) Tournai: Desclée & Cie., 1954. Pp. vii + 546.**

Though this work is formally a work of theology, anyone who is at all interested in moral theory will find it valuable and stimulating. Of pronounced philosophical interest are the following: the structure of the book itself as an instance of the philosophical organization of moral theology; the introduction, especially the sections dealing with the nature and method of moral theology and philosophy; the norm of morality, natural reason, and

law, with the rich historical notes; the judgment of conscience and its relation to law; and the notion of virtue and of the prudential judgment.

La philosophie de demain. **By Augusto Guzzo. Tr. by Marie-Louise Roure. Preface by René le Senne. Paris: Aubier, 1953. Pp. 108. Paper, fr. 345.**

Augusto Guzzo is one of those Italian philosophers who are sometimes called personalists but whose closest bonds are with the French movement known as the philosophy of spirit. René le Senne, in his helpful introduction, suggests that the Italians might be considered modern Christian Platonists. This work is intended to serve as an introduction to the thought of Guzzo. Le Senne points out three characteristics: Guzzo's thought is reflective and begins with a consideration of what it essentially is to be human; this discovery of the self leads to the discovery of other persons who are not objects or things; both self and others exist in a world which has some order but also some contingence.

Science et liberté. **Papers and Discussions of the Congress of Hamburg, July 23-26, 1953. Supplement to *Preuves* (No. 37, March, 1954). Paris: Preuves, 1954. Pp. 126. Paper, fr. 120.**

This supplement and the congress which it reports are concerned with the liberty of science in the face of any kind of totalitarianism. Among the major papers, those by Raymond Aron, Sidney Hook, Valentin Gitermann, Georg von Rauch, and Theodosius Dobzhansky take up various aspects of science under Communist control. Other major papers take up similar, or more general relations. Jean Thibaud considers state support; H. Plessner, ideological vulnerability; Siegfried Landshut, certitude; Roger Apery, neutrality; and Theodor Litt, science and moral responsibility. The special sessions concerned science and society, the means of livelihood, scientific method, politics, and the scientist as a citizen.

La cité musulmane. Vie sociale et politique. **By Louis Gardet. "Etudes musulmanes," I. Paris: Vrin, 1954. Pp. 400. Paper.**

The first part of this work is a study of Mohammedan political and social philosophy. It considers the general categories of this thought, egalitarian theocracy, and other principles of social organization. The second part outlines the organization of powers in the ideal city. The third part studies the Mohammedan community. The fourth part is a study of Mohammedan

humanism. There are several appendices and four indices. This is a very carefully documented and valuable study.

Emotive Propositions. **By Sören Halldén. Stockholm: Almqvist & Wiksell, 1954. Pp. 232. 20 Sw. kr.; paper, 15 Sw. kr.**

This is a study, by means of "philosophical analysis," of concepts like "goodness" and "beauty." The author, following Tegen to some extent, holds that these concepts involve "emotive propositions" which have the same status as propositions about color. They are therefore meaningful and so either true or false.

The alleged "metaphysical neutrality" of such an investigation may lead to results specified by the author as "interesting," but it is by no means clear that they have adequately solved the initial problem.

Le problème de l'âme. **By Stephan Strasser. Tr. from the German by Jean-Paul Wurtz. Preface by A. De Waelhens. Louvain: Nauwelaerts, 1953. Pp. xiv + 258. Paper, $3.60.**

This work, previously published in Dutch, is a study of the relations between philosophical psychology and experimental psychology. The author uses both dialectical and phenomenological analyses. In the first part, the author studies some inadequate modern conceptions; the three studies in this part deal with the empirical notion of soul, the spiritual self, and objective psychology. The second part is more positive in content; it deals with the phenomenology of the ego as author of its acts, the incarnated ego, the ego as interiority of consciousness, and the concept of the soul in metaphysical psychology and in experimental psychology. The book contains many valuable analyses and some very pertinent considerations; the author is a skilled phenomenologist. Yet the book does not give any final or completely satisfying answers. Perhaps a major reason for its inadequacy lies precisely in the notion of "metaphysical psychology" (instead of a philosophy of human *nature*).

There is a good bibliography but no index.

Droits personnels et autorité. **By Louis Janssens. "Questions de morale". Louvain: Nauwelaerts, 1954. Pp. 77.**

This book consists of three conferences given at the University of Fribourg. It is not a systematic exposition of social philosophy but a study of the basic meaning of person and society. The three chapters take up the bases

of social thought, authority and the common good, and personal rights and authority. The style and method of presentation are admirably suited to a nonspecialist audience, and the book can be highly recommended as a vivid, concrete, nontechnical presentation of an acute modern problem.

There is no index.

Psychologie de la sensibilité. **By Albert Burloud. Paris: Librairie Armand Colin, 1954. Pp. 223.**

This posthumous publication deals with its subject in a very broad yet well-informed fashion. The author points out that "sensibility" comprises both sensation and sentiment (affectivity). He takes a determined stand against those who analyze all psychic phenomena as intentional and insists strongly on the passive aspect of sensibility.

The book, however, studies only affectivity in detail. The author takes up the bases of affectivity, the sentiments and their formation (development), and the disorders of sentiment. There is no index and only a very brief bibliography.

Zur Enzyklika "Aeterni Patris" Text und Kommentar. **By Franz Cardinal Ehrle, S.J. Ed. by Franz Pelster, S.J. Rome: Edizioni di Storia e Letteratura, 1954. Pp. 202. Paper.**

On the occasion of the seventy-fifth anniversary of the encyclical and of the twentieth anniversary of Cardinal Ehrle's death, Franz Pelster has edited this commemorative volume. In it are contained the text of the encyclical, the commentary of Cardinal Ehrle (published in 1880), two studies by the same author, and a biographical sketch of him. The commentary was published in *Stimmen aus Maria-Laach* and is still one of the best. The second article, "Das Studium der Handschriften der mittelalterlichen Scholastik", was published in *Zeitschrift für katholische Theologie* in 1883 and served as a program for the Cardinal's own life efforts as well as for the labors of the Scholastic revival. The third article, "Nuove Proposte per lo Studio dei Manoscritti della Scholastica Medioevale," was published in *Gregorianum* in 1922 and is a kind of retrospect over the work of forty years as well as an indication of the work that remains to be done.

Critica. **By Joseph De Vries, S.J. 2d ed. Barcelona: Herder, 1954. Pp. xi + 210.**

The first edition of this work was published in 1937. Even in its first

edition, the work was recognized as one which was alert to modern problems. The present edition is a much larger book; almost every part of it has been changed. The author notes that the proof of the existence of an external world has been considerably revised and rearranged; but basically his position is that of an immediate realism of our own intellectual acts and a mediate realism as regards an external world. His most fundamental argument for such a realism rests on a sharp separation between sensation and intellection: sense cannot know being, and intellection is abstractive. The author holds that the object of "ontology" is reached by formal abstraction and that we can make some a-priori synthetic judgments about these objects; these judgments are necessary and universal, but they are not about actually existing things. It is another question whether such an ontology is the metaphysics of St. Thomas, as the author seems to think.

Science et humanisme. La physique de notre temps. **By E. Schrödinger. Tr. by J. Ladrière. Brussels: Desclée de Brouwer, 1954. Pp. 120.**

This series of four lectures was first published in 1951. The main title applies only to part of the work, in which the eminent physicist asserts that science has a nonpractical value. The major part of the work is taken up with an explanation of the nature of modern science—its use of models, its constructural method in general.

De Rosmini à Lachelier. Essai de philosophie comparée. **By Régis Jolivet. With *L'Idée de la sagesse.* By Antonio Rosmini. Tr. by Marie-Louise Roure. Paris: Vitte, 1954. Pp. 254. Paper.**

The first part of this book (pp. 1-93) is a comparison between Rosmini and Lachelier on the problem of knowledge, the idea of being, and God. Jolivet finds a striking similarity in the placing of the problem, the method, and even the solution; nevertheless, a direct dependence of Lachelier on Rosmini cannot be shown. Rosmini, in general, is clearer and more conscious of his particular problematic.

The second part of the book (pp. 105-254) is a French translation of *The Idea of Wisdom* which is the third part of the *Discourse on the Author's Studies,* written as part of an introduction to philosophy which was never completed by the author. Jolivet, in a short introduction to this selection (pp. 97-104), locates this treatise in relation to the other works and points out that it will serve to give a general idea of the thought of Rosmini.

Morale chrétienne et requêtes contemporaines. **"Cahiers de actualité religieuse." Tournai: Casterman, 1954. Pp. 291. Paper.**

This collection of essays is the basic material presented in the "Rencontres doctrinales" held at La Sarte à Huy. In the introduction, Bernard Olivier, O.P., points out that there is something of a crisis in Christian moral doctrine and that contemporary man has some definite problems and strong desires about this doctrine. Several of the essays deserve special mention in a philosophical journal; they are competent and well-documented presentations and inquiries. Robert Flacelière, of the University of Paris, compares Greek moral theory and that of the New Testament. Hubert Delville, O.P., of the Collège Théologique of La Sarte, discusses the psychological bases of moral living, especially in reference to present psychological theory. Prudent Driessen, O.F.M., of the Institut Social-Ecclésiastique of La Haye, discusses sociology in relation to moral life. François Duyckaerts, of the University of Liège, presents the existential liberty as conceived by Karl Jaspers. Francis Jeanson gives a summary of Sartre's views on the existential characteristics of human conduct. Henri-Dominique Robert, O.P., of the Collège Théologique of La Sarte considers existential phenomenology in relation to Thomistic morality.

Foi catholique et problèmes modernes. **By M.-M Labourdette, O.P. "Le monde et la foi." Tournai: Desclée et Cie., 1953. Pp. 165. Paper.**

This is not a technically theological study but a work of general interest. For those interested in philosophy, the sections dealing with the role and value of reason, the fundamental notions of morality, and the individual person and the moral law will be of especial interest.

La phénoménologie et la foi. **By Raymond Vancourt. "Le monde et la foi." Tournai: Desclée et Cie., 1953. Pp. 126. Paper.**

This book attempts to answer two questions: What is phenomenology? and What is the phenomenology of faith? The author considers phenomenology as a method and as a theory and, in the latter case, as a science (an interiorized psychology) and as an implicit metaphysics (a transcendental idealism). As a doctrine, in either case phenomenology will necessarily mutilate the phenomena of religion and faith. This is a notable critical study of phenomenology which deserves careful attention.

Relazioni e discussioni (1951-1952). **Foreword by M. F. Siacca. Milan: Fratelli Bocca Editori, 1953. Pp. 168. Paper, 1000 lire.**

These proceedings of the Associazione Filosofica Libure show the interests and concerns of Italian philosophers. Many of the discussions and papers concern historical points: Italian philosophers, Plato, and Reiner Maria Rilke (by F. J. von Rintelen). The theoretical points treated are value (by R. Le Senne), logic and metaphysics, the dialogue.

Les philosophies de l'existence. **By Jean Wahl. Paris: Librarie Armand Colin, 1954. Pp. 175. Fr. 250.**

This little work is a summary presentation, but for all that it is of great value even for scholars in the field. The author is well acquainted with his subject, and the style is both clear and interesting.

The first part sets out briefly the background of these philosophies, the ideas to which they are opposed, and the general course of their evolution. The second part takes up the existentialist "categories" expressed in related and contrasting triads. These are: (1) existence, being, transcendence; (2) the possible and the project, the origin, the present and the situations; (3) choice and liberty, nothingness and anguish, authenticity; (4) the unique, the other, communication; (5) subjectivity-truth, being-truth, the multiplicity of truths; (6) paradox, tension, ambiguity.

JOSEPH F. WULFTANGE, S.J., *West Baden College*

The Division and Methods of the Sciences. **By St. Thomas Aquinas. Tr. by Armand Maurer, C. S. B. Toronto: The Pontifical Institute of Mediaeval Studies, 1953. Pp. xxxvi + 96.**

Science in Synthesis. **By William H. Kane, John D. Corcoran, Benedict H. Ashley, and Raymond J. Nogar, of the Order of Friars Preachers. River Forest, Illinois: Dominican College of St. Thomas Aquinas, 1952. Pp. 290. $3.50.**

Since the term of all philosophical inquiry is the reflective synthesis of the given and since every age contributes to, and expands, the area of the given, philosophy never reaches its goal but progresses or evolves from one historical stage to another in its successive refinements and penetrations. Thus, one aspect of Greek philosophy was its synthesis of change and being, while to the Middle Ages we owe a lasting and detailed synthesis of philosophy and theology. It is the task of modern times to effect a synthesis of two disciplines which have thus far resisted to a large extent all efforts at integration, science and philosophy. The two books that are reviewed here show how Thomistic philosophy is meeting this modern problem. The first is a translation of one of St. Thomas's commentaries that sets forth some basic principles that must be preserved in such an integration, while the latter is a modern Thomistic attempt to articulate these basic principles with the exact sciences.

Father Maurer's book is a translation of Questions V and VI of St. Thomas's commentary on the *De Trinitate* of Boethius. The translation is preceded by an introduction of some thirty pages, which provides one of the clearest, simplest, and yet accurate presentations of St. Thomas's doctrine on the hierarchy and methodology of the sciences that this reviewer has discovered. In addition, this introduction provides a historical background for St. Thomas's commentary, a discussion of related questions such as the validity of the Cajetan-John of St. Thomas interpretation of St. Thomas's three modes of "abstraction" and a comparison of Aristotle's integration of the sciences with St. Thomas's, together with abundant references to other works of St. Thomas and contemporary scholars that serve to amplify and modify the doctrine of the text translated. The translation itself, filling some seventy-six pages, is clear and idiomatic, and contains numerous explanatory notes

and references. As an appendix, three short passages are translated from other commentaries of St. Thomas—the first treating of the division of the sciences; the second, of metaphysics as a science; and the third, of the order of learning the sciences. A bibliography of the ancient and medieval authors cited and another of general readings are followed by an index.

St. Thomas's explanation of the hierarchy of the sciences is based on the distinction of formal objects. This distinction has been systematized by saying that being is the formal object of metaphysics; quantity, of mathematics; and the movable, of natural philosophy. However, it is precisely this tripartite distinction that is a formidable obstacle to the synthesis of philosophy and science. For instance, to say that quantity is the formal object of mathematics leads to the classification of the objects of Euclidean geometry as *entia realia* and those of non-Euclidean geometry as *entia rationis* (p. xxxv, n.). This preferential treatment of Euclidean geometry is hard to justify, since modern mathematics considers the two branches in exactly the same way and endows them with the same rights and privileges. Again, to say that the movable is the formal object of natural philosophy does not sufficiently provide for the distinction between natural philosophy and modern science. This difficulty is recognized by most modern Scholastics, but as yet there is no agreement as to a satisfactory solution of it.

It was to investigate these and similar difficulties and to inaugurate a solution that the second book reviewed here was written. The Dominican fathers of the College of St. Thomas Aquinas, River Forest, Illinois, have been working for a number of years toward a resolution of these problems and organized the Albertus Magnus Lyceum for Natural Science as a cooperative undertaking in the philosophy of science. The first summer session of this lyceum was held during July, 1952, and included cleric and lay students in various branches of philosophy and science. The method employed was both historical and dialectic. Fundamental topics both in ancient and modern science were studied and discussed. The discussions were divided into five weeks, one each for physics, chemistry, biology, psychology, and a tentative outline of unified natural science. The book reviewed here is a well-written paraphrase of the proceedings, divided into five parts, each followed by its own series of notes and references. The book concludes with a selected bibliography for each week and an index.

It is obviously impossible to give an adequate idea of the contents of this book, for many different topics have been approached from quite different points of view. Yet the intellectually honest, well-informed, and detailed character of the discussions demands recognition; and so one development of the section on physics will be singled out for consideration.

Within the discussions of the first week there occurs and recurs the ques-

tion of the formal object of physics. This debate broke out innocently enough in an attempt to determine what Galileo meant by his distinction between abstract forces, resistances, and so on, and concrete ones. Out of this discussion two general positions arose, which for convenience' sake will be termed the philosophers' and the physicists' respectively: (1) that Galileo studied physical reality as measurable and hence that his method gave only approximate and probable results; (2) that Galileo studied physical reality as such, using mathematics only as a tool, and that his method gave some certitudes. In order to seek further evidence one way or another, Newton's *Principia* was examined. The physicists maintained that since Newton's first law of motion was mathematically superfluous, its significance lay precisely in the fact that physics considers physical reality as such.

After some time this discussion was resumed in the case of Einstein's theory of relativity. The problem was neatly formulated in the following question.

> Is it not an obvious physical fact, fundamental to a strict physical science, that there is a real difference between motion and rest? If so, then the theories of Newton and Einstein, if they are really physical and not merely metrical theories, ought to maintain this distinction as a certitude. Do they? (Pp. 53-54.)

The person who posed this question, offered three possibilities.

> (1) The disjunctive physical difference between *rest* and *motion* apparently given in daily experience . . . is an illusion. (2) Or this difference is real, but the Newtonian and Einsteinian theories deny its physical reality; hence they are false. (3) Or this difference is real, but the aforesaid theories, because they are purely metrical (i.e., mathematico-physical), abstract from this difference (p. 54).

There was general agreement that the first two possibilities should be eliminated. Those who held that the formal object of physics was the measurable (the first position described above) accepted the third possibility. The physicists, however, refused to honor the third possibility for the following reasons: (1) Even the general theory of relativity admits of motions which cannot be transformed into a state of rest by the selection of appropriate co-ordinate systems. (2) We are certain of the difference between motion and rest from our ordinary experience because such motion is highly complex, while relativity theory treats of simple (ideal) motions. (3) The physical significance of the special theory of relativity is that it generalizes the notion of rest to include uniform motion.

When some of the participants suggested that this last item was an admission that relativity theory did not distinguish between rest and motion, a

physicist replied that although the theory is incapable of determining absolute rest, yet it does not deny our ordinary experience.

One of the exponents of the first position said that the physicist's response was precisely equivalent to that of a pre-Galilean physicist inasmuch as it is possible to distinguish between rest and motion per se—although it may be impossible to determine whether that which is at rest per se may not be in motion per accidens. Consequently, the absolute distinction between rest and motion did not necessarily entail the possibility of detecting absolute rest by a process of measurement. On the other hand, the theories of both Newton and Einstein seem to be inadequate to explain the absolute distinction between rest and motion, since they consider merely the metrical aspects of reality.

On being asked for an explanation of per-se motion or rest, the philosopher replied that motion or rest was per se if it was natural to a body; that is, if it originated from an internal principle. And since Newton and Einstein abstract from this nature and restrict their attention merely to metrical aspects, they necessarily lose this distinction.

The physicists replied that it was by no means clear what was a natural motion and what was not. Granted the distinction between walking and not walking, such a motion was far too complex to be admitted as the basis of a physical theory. The philosophers pointed out that although such a motion was mathematically complex, it was physically simple.

This dialectic on the formal object of physics terminated naturally in the discussion of the value of common-sense judgments for science. One group maintained that Galileo founded modern physics by refusing to build on such judgments; another, that although common-sense judgments are presupposed by modern physics, they cannot enter into its actual synthesis until they can be given an operational meaning; still another, that modern physics as conceived by the two preceding positions could not be an adequate expression of physical reality since it can make no use of the most basic of ordinary experiences.

The Scholastic philosopher of modern science is exhibiting some schizophrenic tendencies. On the one hand he is convinced that modern science is not completely expressive of reality and that such complete expression is to be found only in natural philosophy. Thus, he is convinced that matter and form, substance and accident, are essential to a complete understanding of the physical world. On the other hand he is at least uneasily aware that natural philosophy is singularly inept to help further the designs of physics. Whatever be said of the crises in physics, he knows that it is optimistic to think (1) that these crises have hindered the growth of physics (rather, they initiate eras of unprecedented advances) and (2) that physics has over-

come these crises by help from natural philosophy.

Moreover, when the Scholastic philosopher, impressed by the validity of both physics and natural philosophy, tries to reconcile them, he usually starts with certain ideas and judgments which he judges must be true and primitive in the light of his everyday experience and a valid metaphysics; that is, the continuum, the distinction between quantity and quality, place and ubication, motion, time and simultaneity, and so on. With this guaranteed set of necessary minimals, he tries to fit modern science into it by a skillful use of *entia rationis cum fundamento in re.* However, it is becoming clearer that in most such attempted integrations sooner or later violence is done to the scientific theories. Thus, as far as a scientist is concerned, there can be Euclidean or non-Euclidean space, depending on which best integrates his sense data. The natural philosopher, however, is not free to accept this parity and is committed to say that space as Euclidean is an *ens reale,* while space as non-Euclidean is an *ens rationis cum fundamento in re.* Again, a scientist explains the submicroscopic universe in terms of a wave-particle theory that is integrally consistent only by introducing a radical indetermination in nature. But a Scholastic philosopher is usually committed to a particle theory with waves as adjuncts which incurs some anomalies in physical experience; for instance, electron-positron creation and annihilation. Thus the Scholastic philosopher is conscious that his integration is not satisfactory, and yet he does not wish to relinquish either term of his attempted integration.

But precisely because Scholastic philosophy was, is, and always will be an integralist philosophy, it is fundamentally honest in that it never closes its eyes to any aspect of reality; and in this characteristic lies the precise remedy and, without doubt, the future cure of its present schizophrenic tendencies. Thus, this last book is a truly honest attempt to cure the malaise of present-day Scholasticism by an integralist approach. It was not to be expected—nor was it the intention of this book—to give final and definitive answers; but it is a step in resolving the present crisis of the Scholastic philosophy of science.

JAMES COLLINS, *Saint Louis University*

The Teaching of Philosophy: An International Enquiry of UNESCO. **Paris: UNESCO, 1953. Pp. 230. $1.75.**

In 1951 UNESCO issued a detailed questionnaire on the teaching of philosophy in the various countries belonging to the United Nations. The present report was drawn up by a committee on the basis of answers re-

ceived from philosophical organizations and individuals. Eight different countries are represented: Cuba, Egypt, France, Germany, India, Italy, the United Kingdom, and the United States. Each of the national reports is written by a leading philosopher of the country in question. Significantly, no information is provided by or about countries behind the Iron Curtain, so that this survey reflects the state of philosophical instruction only in the non-Communist countries.

The separate national reports vary widely in quality and attitude. The Cuban chapter reveals the low estate of philosophy in a country which was ravaged intellectually by nineteenth-century positivism, with its enmity toward metaphysics and the history of philosophy. Egypt and India are cases where the political and cultural transitions are reflected in philosophical instruction itself. Both countries are attempting to reassert the indigenous values of Eastern thought, without eliminating the Western traditions which previously dominated the school systems. The political factor looms very large in the Italian response, which in effect is a plea for Gentile's plan about philosophy teaching at the secondary level. This plan is defended against the charge of Fascism and is proposed as a countermeasure against directing philosophy along Christian and theistic lines. The German chapter is strongly on the defensive and finds little to criticize in the work being done in German universities. Certainly, the most informative and self-critical chapters are those dealing with France, the United Kingdom, and the United States. They contain valuable recent information on the educational side of philosophy. As far as our country is concerned, a general statement of conditions is given by M. H. Moore, while Richard McKeon describes in detail the program at the University of Chicago.

Among the general conclusions to emerge from this survey, emphasis is placed on the free character of philosophical inquiry, the irreducibility of its knowledge, and its only indirect relationship with political and social life. The only limitation placed upon the teacher is the principle of tact or respect for the student's own freedom. No definite principles and true doctrines can serve as a norm in a pluralistic world society, so that a working unity must rest on common respect for the methods of rational inquiry. It is recommended that students be introduced directly to philosophical classics, rather than be restricted to the study of textbooks. The Europeans are insistent upon the need for personal research as the animating source of good instruction in the universities. McKeon touches on the striking divergence between the European method of dialectical thinking and the more pragmatic bent of Americans. This book will quickly bring one abreast of the prevailing opinions on philosophical instruction in at least one half of the world.

FRANCIS L. HARMON, *Saint Louis University*

The Human Person. **By Magda B. Arnold and John A. Gasson, S.J., in collaboration with Charles A. Curran, Vincent V. Herr, S.J., Frank J. Kobler, Noël Mailloux, O.P., Alexander A. Schneiders, Walter Smet, S.J., Louis B. Snider, S.J., and Annette Walters, C.S.J. New York: Ronald Press Co., 1954. Pp. x + 593.**

Tache, réussite et échec. **By Joseph Nuttin. Louvain: Publications Universitaires de Louvain, 1953. Pp. ix + 530.**

Although concerned with different areas of psychology, the two volumes under review have at least one significant point in common. Both reflect a realistic appreciation of the science as it actually exists today and, consequently, both succeed in dealing with important contemporary issues at a psychologically sophisticated level.

The Human Person consists of a series of papers by leading Catholic psychologists that originally were presented at a "workshop in personality" held at Barat College in June, 1951. Collectively, they represent, according to the subtitle, "an approach to an integral theory of personality," based (the preface adds) "on a Christian conception of human nature." In all, there are nineteen papers, arranged in five sections covering psychological theory in general, personality theory, the problem of personality integration, psychotherapy, and religion.

A central theme in many of the chapters is that the psychological analysis of personality, if it is to lead to any worth-while understanding of the individual, must center upon the characteristically human aspects of man's nature. Professor Arnold, for example, argues that

> the psychologist, if he assumes from the beginning that the human person is only an intelligent *mammal*, will discover at the end of his researches that he has described a mammal and failed to describe an intelligent one. If, however, he assumes that the human individual is an *intelligent* mammal and tries to discover wherein this intelligence lies, he may at the end of his researches have come to understand a human being as a human being (p. 46).

Similarly, Father Gasson insists that "the level at which the human being functions is to be judged not by the bottom but by the top grade of his activities" (p. 168). Such ideas, of course, are not new; but in the present work they take on a decidedly new significance because they are translated into a specific program of psychological research instead of being left hanging vaguely in the air, as has happened so often in the past. Thus, one

entire chapter is devoted to formulating a psychological theory of personality and another to the description of an actual experiment suggested by this theory. These two chapters doubtless will impress many readers as comprising the most interesting and original feature of the book.

On the negative side, it appears that some of the authors may be a trifle too sweeping when they condemn certain conceptualizing practices of modern psychology; in pointing out the abuses of these practices, they seem to reject their legitimate use as well. The appeal to physical and biological models in theory construction is a case in point. Certainly, as Father Gasson rightly explains, such models are inadequate to account for human conduct in its totality; yet there is another side to the question. For certain special purposes it often is desirable—and entirely permissible—to conceptualize some aspect of personality in a purely fictitious manner, making use of a hypothetical model in order to symbolize the facts. In factor analysis, for example, psychologists have found that the geometry of hyperspace can provide an effective conceptual tool for disentangling some of the complex interrelationships among personality traits. Again, every student of psychology knows how conflicting motives may be represented simply as physical forces of specified magnitude and direction, and how the outcome of certain conflict situations may be predicted on the basis of such an analogy. Admittedly, this involves oversimplification; it also means disregarding, for the moment at least, some of the most distinctively human aspects of motivation. But, at the same time, this particular model has helped psychologists to deduce an experimentally verifiable answer to the immensely practical question, "Why do some types of conflict produce vacillation and apparent paralysis of action, while other types are resolved with little or no disruption of behavior?"

On the whole, however, the book is a valuable contribution to personality theory. All of the chapters are thought-provoking, carefully polished, and testify to much preparation on the part of their respective authors. Although hardly "a primary text for courses in personality" (p. iii), it should make a very useful set of readings for more advanced students.

Father Nuttin's book presents a combined experimental and theoretical attack upon a basic problem of motivation. As he formulates it, the problem is this: "By what processes does the result of a previous action exert its influence upon the development of subsequent behavior?" Formulated in these terms, we have a question which has occupied both experimental and clinical psychologists for many years—the former being represented by learning theorists; the latter, chiefly by psychoanalysts. Since the problem thus provides a meeting-ground for these two currents of psychological thought, it is not surprising that it should have appealed strongly to one whose interest in both fields is well known.

The experimental part of the work deals with the perception and recall of success and failure in simple tasks presented under standard conditions. Results were obtained which indicate that personality traits related to persistent attitudes of success or failure often prove more potent than actual achievement in determining an individual's impressions as to how well or how poorly he has done in a series of tasks. Starting from these findings, Father Nuttin elaborates a theory concerning the integration of experience into the "dynamic system" of the subject as the basis for its conservation in memory and its influence upon future conduct. Apart from the theory itself and its development in the very competent hands of the author, his penetrating discussions of other major theoretical systems constitute one of the most valuable aspects of the book.

VINCENT EDWARD SMITH, *University of Notre Dame*

Philosophical Studies in Honor of the Very Reverend Ignatius Smith, O.P. **Ed. by Rt. Rev. Msgr. John K. Ryan. Westminster, Md.: The Newman Press, 1952. Pp. xii + 316. $5.00.**

The occasion of this book of sixteen essays was the sixty-fifth birthday of Father Smith. Monsignor Ryan, in a brief introduction, singles out achievements in the dedicated life of Father Smith which justify the group of studies that friends, former students, and associates tendered him.

The authors and their chapters are: Bishop J. Marling, "The Dialectical Character of Scientific Knowledge"; Rt. Rev. G. Benkert, "Thomistic Philosophy and International Society"; Rev. J. Baisnée, "St. Thomas Aquinas's Proofs for the Existence of God Presented in Their Chronological Order"; R. Allers, "Ens et Unum Convertuntur"; Rev. J. McAllister, "Chance in Aristotle and Aquinas"; J. Noonan, "The Protestant Philosophy of John Locke"; Rev. F. Meehan, "Lux in Spiritualibus According to the Mind of St. Thomas Aquinas"; Rev. O. Bennett, "Existence and the First Principles according to St. Thomas Aquinas"; J. Collins, "Scheler's Transition from Catholicism to Pantheism"; Rev. J. McWilliams, "Action Does Not Change the Agent"; Rt. Rev. W. McDonald, "Toward a Philosophy of Economics"; Rev. A. Wolter, "The Recognition of Miracles"; J. Rosenberg, "Freedom in the Philosophy of Kant"; B. Brown, "The Law of Contracts and the Natural Law"; Rev. G. Reilly, "The Dynamics of Moral Conduct"; and Rev. E. Maziarz, "Number Freedom."

The topics treated can be seen to range through virtually the whole field

of philosophy and, except for the absence of sisters educated under the kindly influence of Father Smith, the authors are representative of the wide area of American Catholic philosophy that his work as a person, priest, and professor has effected for the glory of God.

JOSEPH DE FINANCE, S.J., *Vals, Le Puy en Velay*

La preuve réelle de Dieu. **By Joseph Defever, S.J. Bruxelles: L'Edition Universelle; Paris: Desclée de Brouwer, 1953. Pp. 146.**

The "real proof of God," according to Father Defever, is that one which starts from real being, always keeps in contact with it, and finally leads to the real God's existence. The reflexive dialectic Father Defever propounds ought not duplicate, much less replace, the traditional demonstration but rather justify it critically. The starting point is "the experience of the intellect, as it grasps itself in the act of knowing the sensible object; an experience which is indissolubly objective and subjective" (p. 15) and can truly be called "an impure intellectual intuition" (p. 22). An intuition, because there—and there only—knowledge coincides with its object. But an *impure* intuition because essentially limited by nonintuitive elements.

The reflection on this *primum datum* supplies the only possible justification of the principle of causality. The act of knowledge appears as the provisional term of a tendency in which the subject receives from the object its actual perfection of being. Therefore "by reflexively grasping the presence and opposition of the object to consciousness, we experience its causal-final influx on the subject" (p. 37).

On the other hand, the object, the reality of which obtrudes itself upon us, is given us in the concept. The concept, then, is also true and real. "Being is present, and indissolubly, both by intuitive consciousness of affirming activity and abstract concept" (p. 51). Hence, the discursive process is justified, and fortunately, for we have no other natural means to reach God by way of knowledge.

After these critical prolegomena, the proof itself can be developed. It essentially consists in "expliciting the implications of the real object, final cause of the knowing subject," showing how this object is really double. "Under the immediate sensible object, pure and unlimited existence is hidden, as under its defective participation; it is it that gives our act of knowing, through finite causes, its own reality" (p. 57). This pure and unique existence reveals itself as "an active identity of being, intuition and love" (p. 59); it transcends all finite objects. For these objects, while actuating

the intellect, still appear as if checking its impetus, because of their very finitude; therefore, they cannot coincide with the ultimate final cause, which raises up this impetus. On the other hand, this ultimate end cannot be a mere ideal, for

> that which constitutes the actual perfection of being of our affirmation is not the object as simply represented and limited but the object precisely as it makes itself actually conscious; that is, the object both as represented and transcended by my activity; the object, then, insofar as it participates of what I am transcending it towards. . . . It actuates and realizes me just *by limiting me.* Therefore, what constitutes my actual perfection of being is my final cause and exists in itself—that is, beside and beyond the immediate and limiting object; it is that whose causality is limited by this object (pp. 66-67).

In other words, the ultimate cause actuates the intellect precisely by moving it to go beyond any limited actuation. As the first source of its impetus, it must actually possess this very illimitation which is potentially to be found in the latter.

Against some Thomists, who take too literally Aquinas's formulae, Father Defever rightly affirms the possibility of positively knowing, to a certain extent, what God is, "owing to the intelligible signification included in our affirming activity" (p. 77). "We can only signify God, recognize Him at a sign, very exactly, however, even in His essence. . . . This sign is the movement of transcending affirmation, as reflexively intellected" (p. 80). By grasping itself as intellectually actuated under the influx of the First Cause, the subject intelligibly coincides with God's activity, as seen on the side of its term. As this activity cannot be grasped independently of the representation of the object, we must say that we know God only through objective representations, which signify but do not represent Him. That is analogical knowledge. Here, Father Defever rightly maintains the reciprocal inclusion of both classical forms of analogy. Attribution involves proportionality and vice versa.

God, thus reached, is "real" not only in the objective but also in the subjective sense; that is, He exists, in a certain way, for and by me. That, of course, by no means implies He does not exist in Himself; it implies that His existence is "the adequate, supreme, fully actual answer to my call for infinite perfection" (p. 95) and that "I cannot know nor will Him nor find in Him my perfection without contributing to it" (p. 96). The natural will implied in every act of knowledge requires a deliberate choice, which gives it its fulfilment. When I choose God, I make Him exist for me in a new way. Besides, "personal option takes place at every stage of the proof of God; it subjectivizes all the articulations of it" (p. 100). And this proof

must lead to love, self-surrender, adoring prayer, which will make our meeting with Him a personal one.

But the proof of God requires another subjective complement in the affective order. Now, our analysis enables us to justify the affectivity. It is nothing but the consciousness of the internal limit of the reflection. In some pages, which are perhaps the best and most original of the book, (pp. 111-14), Father Defever analyses some "spiritual feelings" which unveil to us our "total situation of being in the world and transcending the world towards the Unlimited" (p. 112). These feelings, however, although they may enrich the objective proof of God, can by no means dispense with them.

> Thus, the traditional proof, under its utterly bare and sober appearance, is faithful to the metaphysical situation of incarnate existing. It is existential in a sense we must call mitigated, if related to the excessive exigencies of strict existentialism, but which in fact is the proper sense, since it is the only true one. In short, it introduces us to God's objective and subjective reality; it is, besides, if we remain in the natural order, the most authentically possible fulfilment of our own existence. We therefore can rightly close the critical enquiry we intended by ascertaining that the traditional proof of God started from reality, did not lose reality in the way, leads to the real God, and realizes the existent who makes it (p. 127).

An appendix is dedicated to reinstating, against deforming interpretations, Father Maréchal's true meaning about some points.

La preuve réelle de Dieu is a first-class essay, remarkable by its critical sincerity and anxiety of continually keeping in contact with existence, the richness and variety of its insights, its open-minded and progressive thomism. One will wonder, however, whether the author really excludes any ontological presupposition, as he intends to. At any rate, the conclusion from God as final cause to God as efficient and creative cause is rather abrupt. Of course, such presuppositions are inevitable, just because they are not presuppositions at all but evidences involved in the basic evidence of being. And it seems to me that by trying to establish ontological principles by way of pure critical reflection—which reflection is possible only in the light of being—Father Defever sometimes makes his demonstration more intricate than necessary. I am afraid the refutation of pantheism will not be judged to be even as convincing as the classical one by the impossibility of admitting in the Absolute itself relativity, motion, nonbeing, and so on. I think also that the author ought to have more clearly explained the relation between his real proof and the traditional one and how the latter can be still regarded as valid and legitimate.

BIBLIOGRAPHY OF CURRENT PHILOSOPHICAL WORKS PUBLISHED IN NORTH AMERICA

For the purposes of this bibliography, "philosophy" will be understood in a very broad sense. It will include works in other fields—such as sociology, aesthetics, and politics—that involve philosophical principles and problems.

"Current" books will be understood to include new books, revised editions, and reprints if the previous printing had been out of stock for a notable period of time, or if there is a notable difference in price, format, and the like.

The procedure is as follows:

1. *Books announced for publication will be listed in the issue which next appears after the announcement is received.*
2. *Books actually published will be listed in the subsequent issue, even though they were already listed in accordance with No. 1 above.*
3. *Books received by* THE MODERN SCHOOLMAN *will be listed with full bibliographical information and a descriptive and/or critical note in the subsequent issue, even though they were already listed in accordance with No. 1 and/or No. 2. This will be done even if a full review is to appear later.*

ABEL, REUBEN. *The Humanism of F. C. S. Schiller.* New York: Columbia Univ. Press; April, 1955. Pp. 224. $3.50.

ALIGHIERI, DANTE. *Paradise.* Tr. and ed. by Thomas G. Bergin. New York, Appleton-Century-Crofts. Pp. 119. Paper, 45¢

———. *The Inferno.* Tr. by John Ciardi. New Brunswick: Rutgers Univ. Press; August 29, 1954. $4.50. [Corrected entry.]

AUSTIN, JOHN. *The Province of Jurisprudence Determined, and, The Uses of the Study of Jurisprudence.* Introd. by H. L. A. Hart. New York, Noonday Press. Pp. 427. $3.50.

BAKER, MELVIN C. *Foundations of John Dewey's Educational Theory.* New York: Columbia Univ. Press; May, 1955. Pp. 224. $3.50.

BALZ, A. G. A. *Southern Teachers of Philosophy.* Lexington: Univ. of Kentucky Libs., 1954. Pp. 147. $1.00.

BARUCH, BERNARD MANNES. *A Philosophy for Our Time.* New York: Simon & Schuster, 1954. Pp. 60. $2.00.

BELLAMY, EDWARD. *Selected Writings on Religion and Society.* Ed. by Joseph Schiffman. New York, Liberal Arts Press. 75¢

BERDYAEV, NICOLAS. *Christianity and Anti-Semitism.* Tr. by Alan A. Spears and Victor B. Kanter, with a commentary and notes by Alan A. Spears. New York: Philosophical Lib., 1954. Pp. 58. $2.75.

This short work (pp. 1-30) deals with the problem of anti-Semitism from a practical and spiritual point of view, and insists that anti-Semitism will disappear only when all Christians become true interior Christians fully practising Christlike charity. The commentary of Mr. Spears develops a theme only hinted at by Berdyaev, that institutional Christianity necessarily breeds anti-Semitism. Similarly, he picks up some of the pantheistic implications of Berdyaev's thought.

BERKELEY, GEORGE. *Three Dialogues between Hylas and Philonous.* Ed. by Colin M. Turbayne. New York, Liberal Arts Press. Pp. 143. Paper, 75¢

BOKSER, BEN ZION. *From the World of the Cabbalah. The Philosophy of Rabbi Judah Loew of Prague.* New York: Philosophical Lib., 1954. Pp. ix + 210. $3.00.

Judah Loew lived during the sixteenth century, 1512 to 1609. He was not only an influential leader but also a famous teacher and writer. The Cabbalah, as is well known, incorporates both neo-Platonic and Gnostic teachings, and two different tendencies can be discovered in it: the first, more speculative in character, aims at a union with God by a natural mysticism, often through ritualistic practices and invocations of secret names and formulas; the second has a close affinity to magic and alchemy. Rabbi Judah Loew was a student and teacher of the former.

The book is an easily read presentation of the life and thought of Rabbi Judah Loew. It has some notes and references, but it is not a critical study. There is an index.

BRONSTEIN, DANIEL JAY, and SCHULWEIS, HAROLD M. (eds.). *Approaches to the Philosophy of Religion.* New York, Prentice-Hall. Pp. 541. $7.65.

BROWN, STUART GERRY. *The First Republicans.* Syracuse, Syracuse Univ. Press. Pp. 193. $3.00.

COHEN, MORRIS R. *American Thought.* Glencoe: Free Press, 1954. Pp. 360. $5.00.

COTTON, JAMES HARRY. *Royce on the Human Self.* Cambridge, Harvard Univ. Press. Pp. 361. $5.00.

COURNOT, ANTOINE AUGUSTIN. *An Essay on the Foundations of Our Knowledge.* Tr. with an introd. by Merritt H. Moore. New York: Liberal Arts Press, 1954. Pp. 650. $9.00.

CROCKER, LESTER GILBERT. *The Embattled Philosopher.* East Lansing, Michigan State College Press. Pp. 442. $6.50.

DEANE, HERBERT A. *The Political Ideas of Harold J. Laski.* New York: Columbia Univ. Press; Feb., 1955. Pp. 408. $5.75.

DIXON, W. MACNEILE. *The Human Situation.* New York: St. Martin's Press, 1954. Pp. 448. $3.50.

This book, first published in 1937, contains the "Gifford Lectures" for 1935-37. Often praised by reviewers for its style and wit, the book has run through many printings. It deals with man and his world, and the impossibility of finding any certain truth about them and their purpose. In a climate of positivism, the book has at least the merit of seeing that these *are* problems.

DRESSEL, PAUL LEROY, and MAYHEW, LEWIS B. *General Education.* Washington: American Council on Education, 1954. Pp. 325. $3.50.

EHLER, SIDNEY Z., and MARRALL, JOHN B. (eds.). *Church and State through the Centuries.* Tr. by the editors. Westminster, Newman Press. Pp. 639. $6.75.

ELLIS, CHARLES MAYO. *An Essay on Transcendentalism.* Introd. by Walter Harding. Gainesville, Fla.: Scholars' Facsimiles & Reprints, 1954. Pp. 120. $4.00.

EMERSON, RALPH WALDO. *Five Essays on Man and Nature.* Ed. by Robert E. Spiller. New York, Appleton-Century-Crofts. Pp. 128. Paper, 45¢

EPICTETUS. *Niccolo Perotti's Version of the Enchiridion of Epictetus.* Ed. with an introd. and a list of Perotti's writings by Revilo Pendleton Oliver. Urbana, Univ. of Illinois Press. Pp. 175. $4.00.

FAIRBAIRN, WILLIAM RONALD DODDS. *An Object-Relations Theory of the Personality.* Preface by Ernest Jones. New York: Basic Books, 1954. Pp. 323. $5.00.

FIEDLER, CONRAD. *On the Nature and History of Architecture.* Tr. from the German with notes by Victor Hammer. Lexington: Carolyn Reading, 220 Market Street, 1954. $5.00.

FRAME, DONALD M. *Montaigne's Discovery of Man.* New York: Columbia Univ. Press; May, 1955. Pp. 224. $3.75.

GRISWOLD, A. WHITNEY. *The Practical Value of a Liberal Education.* Exeter, N.H.: Phillips Exeter, 1954. Pp. 11. Paper, apply.

HARKNESS, GEORGIA ELMA. *The Sources of Western Morality, from Primitive Society through the Beginnings of Christianity.* New York, Chas. Scribner's Sons. Pp. 268. $3.50.

HARRISON, GORDON. *Road to the Right.* New York, Morrow Co. Pp. 352. $4.50.

Honesty and Integrity. "You and Your USA Series," 7. Published by the Office of Armed Forces Information and Education, Department of Defense. Washington, Government Printing Office. 10¢

HUNTER, EDWIN R. *Shakspere and Common Sense.* Boston: Christopher Pub. Co., 1954. Pp. 312. $4.00.

This book consists of a series of considerations of Shakespearean characters, style, plot, and so forth, all of which more or less turn around the author's basic consideration of Shakspere's common sense. As the author points out in the first chapter, Shakspere was accustomed to make much use of specialized (or, as we might say, scientific) knowledge. The plays arise from an understanding of man and his world that is often profound and almost always characterized by a sober good judgment; yet this understanding has undergone no technical or specialized elaboration. For this reason they can readily be understood by most people who have some degree of literacy.

It is good to have a clear presentation of the spontaneous mode of understanding and of the poetical elaboration of it. Persons interested in the theory of knowledge, in the basis of humanistic education, and in literary criticism will find the book stimulating and helpful.

JARRETT, JAMES L., and MCMURRIN, STERLING M. *Contemporary Philosophy.* New York, Henry Holt & Co. Pp. 524. $5.00.

JEFFERSON, THOMAS. *The Political Writings of Thomas Jefferson.* Introd. by Edward Dumbauld. New York, Liberal Arts Press. $2.25.

KIRK, RUSSELL AMOS. *A Program for Conservatives.* Chicago, Henry Regnery Co. Pp. 325. $4.00.

LEWIS, EWART. *Medieval Political Ideas.* New York, Alfred A. Knopf. Pp. 678. $12.50.

MAIMONIDES. *The Code of Maimonides.* Book 11. Tr. from the Hebrew by Hyman Klein. New Haven, Yale Univ. Press. Pp. 316. $6.00.

MARITAIN, JACQUES. *An Essay on Christian Philosophy.* Tr. by Edward H. Flannery. New York: Philosophical Lib., 1955. Pp. xi + 116. $2.75.

This book is a translation of M. Maritain's first attempt to determine the possibility and meaning of Christian philosophy, an attempt which was carried further by his *Science and Wisdom.* His basic point is that, essentially speaking, philosophy is philosophy and nothing more, but that in its actual existence, in its concrete state, it is Christian, non-Christian, and so forth, and this both with regard to its objects and to its manner of exercise (as aided by faith and the infused virtues). His second point is that moral philosophy in particular is subalternated to theology.

MARTZ, LOUIS L. *The Poetry of Meditation: A Study in English Religious Literature of the Seventeenth Century.* New Haven: Yale Univ. Press, 1954. Pp. xiv + 375. $5.00.

This work studies in detail the influence of the literature concerned with private meditation as a means of prayer upon the poetry of Southwell, Donne, Herbert, Crashaw, Vaughan, and others. It shows these seventeenth-century British poets, as well as the current of piety represented by Richard Baxter, drawing not only on pre-Reformation devotional tradition but on the Catholic ascetical writers of the Counter-Reformation as well, and in particular on the Spiritual Exercises of St. Ignatius of Loyola and its derivatives as well as on St. Francis of Sales. The influence of meditative

practices is not peripheral to the literary performance but determines in great part the conscious approach of these poets (and devotional writers) to their material and conditions their entire sensibility.

MARX, KARL, and ENGELS, FRIEDRICH. *Marx and Engels on Malthus.* Ed. by Ronald L. Meek. Tr. from the German by Dorothea L. Meek and Ronald L. Meek. New York, International Pubs. Pp. 190. $2.25.

MEYER, ALFRED G. *Marxism.* Cambridge, Harvard Univ. Press. Pp. 201. $3.50.

MYERS, FREDERIC WILLIAM HENRY. *Human Personality and Its Survival of Bodily Death.* New York: Longmans, Green & Co. Pp. 627. $15.00.

NAGEL, ERNEST. *Sovereign Reason, and Other Studies in the Philosophy of Science.* Glencoe: Free Press, 1954. Pp. 315. $5.00.

PACKE, MICHAEL ST. JOHN. *The Life of John Stuart Mill.* Preface by F. A. Hayek. New York, Macmillan Co. Pp. 583. $6.50.

Parents and Delinquency. A report of a conference. Washington, Government Printing Office. Pp. 43. 20¢

PEIRCE, CHARLES S. *Essays in the Philosophy of Science.* Ed. by Vincent Thomas. New York, Liberal Arts Press. 75¢

PFUETZE, PAUL E. *The Social Self.* New York, Bookman Associates. Pp. 392. $4.50.

PLATO. *Phaedrus.* Tr. by W. C. Helmbold. New York, Liberal Arts Press. 60¢

RADHAKRISHNAN, SARVEPALLI (ed.). *The Principal Upanishads.* New York: Harper & Bros., 1954. Pp. 958. $10.00.

ROOS, H. *Soren Kierkegaard and Catholicism.* Tr. from the Danish with the author's sanction by Richard M. Brackett. Westminster, Newman Press. Pp. 82. Paper, $1.25.

ROSS, DAVID. *Kant's Ethical Theory.* New York: Oxford Univ. Press, 1954. Pp. c. 108. 80¢

RUNES, DAGOBERT D. (ed.). *A Treasury of Philosophy.* New York: Philosophical Lib., 1955. Pp. 1280. $15.00.

This book consists of selections from 384 philosophers arranged in alphabetical order. Each selection is preceded by a short introductory sketch of the author's life and doctrines. There is no unified theme in the selections; the editor has selected what in each case has appealed to him. The introductory sketches are for the most part good summaries, though at times they seem to be drawn from questionable authorities (for example, the sketch of Aristotle).

RUSK, ROBERT ROBERTSON. *The Doctrines of the Great Educators.* New York: St. Martin's Press, 1954. Pp. 318. $2.75.

SALMAN, D. H., O.P. *La place de la philosophie dans l'université idéale.* "Conférence Albert-le-Grand," 1954. Montréal: Institut d'Études Médiévales, 1954. Pp. 67.

The author makes two points: that under present-day conditions philosophy requires the collaboration of many, which cannot take place effectively outside of the university atmosphere, and, secondly, that the ideal university needs philosophy as an organizing principle. (The author thereby does not intend to exclude or minimize the influence of theology.) As far as the students are concerned, the author holds that all university students should become acquainted with philosophical thinking in three major areas: the method of thinking itself (logic, some epistemology, and psychology of knowledge), the nature of man, the foundations of society. (Metaphysics and the problem of God do not seem to be considered by the author.)

SARTON, GEORGE ALFRED LEON. *Ancient Science and Modern Civilization.* Lincoln: Univ. of Nebraska Press, 1954. Pp. 111. $2.50.

SAUNDERS, JASON LEWIS. *Justus Lipsius: The Philosophy of Renaissance Stoicism.* New York: Liberal Arts Press, 1954. $4.50.

SAW, RUTH LYDIA. *Leibniz.* Baltimore: Penguin Books, 1954. Pp. 240. Paper, 65¢
This presentation of the philosophy of Leibniz is both sympathetic and critical. After a short biography, the author gives a nontechnical summary of the philosophy and then takes up in greater detail and more technical language the notion of the monad, God, space and time, man, moral theory, theory of knowledge, and logic. In the concluding chapter, the author evaluates the contribution of Leibniz; admitting his unquestioned contributions to logic and his statements about individuality, she questions the compatibility of two fundamental Leibnizian positions: (*a*) that every monad is unique and simple; (*b*) that simple properties are compossible and that knowledge of these properties can be combined into knowledge about things.
There are a short bibliography and an index.

SCHMANDT, HENRY J., and STEINBICKER, PAUL G. *Fundamentals of Government.* Milwaukee, Bruce Pub. Co. Pp. 519. $4.50.

SNYDER, LOUIS LEO. *The Meaning of Nationalism.* Foreword by Hans Kohn. New Brunswick, Rutgers Univ. Press. Pp. 223. $4.50.

STALLKNECHT, NEWTON PHELPS, and BRUMBAUGH, ROBERT SHERRICK. *The Compass of Philosophy.* New York; Longmans, Green & Co. Pp. 267. $3.25.

STERN, ALFRED. *Sartre: His Philosophy and Psychoanalysis.* New York, Liberal Arts Press. Pp. xxii + 223. $4.50.

STERN, KARL. *The Third Revolution.* New York: Harcourt & Brace, 1954. Pp. 318. $4.00.

STROLL, AVRUM. *The Emotive Theory of Ethics.* Berkeley: Univ. of California Press, 1954. Pp. 91. Paper, $1.25.

TOMLIN, ERIC WALTER FREDERIC. *Simone Weil.* New Haven: Yale Univ. Press, 1954. Pp. 64. $2.50.

TRAUGOTT, JOHN. *Tristram Shandy's World.* Berkeley, Univ. of California Press. Pp. 182. $3.00.

VAN DOREN, MARK. *Man's Right to Knowledge and the Free Use Thereof.* Introd. by Richard R. Powell. New York: Columbia Univ. Press, 1954. Paper, apply.

WHEELWRIGHT, PHILIP ELLIS. *The Burning Fountain.* Bloomington, Indiana Univ. Press. Pp. 415. $6.00.

WOLF, WILLIAM J. *Man's Knowledge of God.* Garden City: Doubleday & Co.; Feb., 1955. $2.95.

YOST, R. M., JR. *Leibniz and Philosophical Analysis.* Berkeley: Univ. of California Press, 1954. Pp. 216. Paper, $3.00.

BOOKS RECEIVED

BERDYAEV, NICOLAS. *Christianity and Anti-Semitism.* Tr. by Alan A. Spears and Victor B. Kanter, with a commentary and notes by Alan A. Spears. New York: Philosophical Lib., 1954. Pp. 58. $2.75.

BOKSER, BEN ZION. *From the World of the Cabbalah. The Philosophy of Rabbi Judah Loew of Prague.* New York: Philosophical Lib., 1954. Pp. ix + 210. $3.00.

BURLOUD, ALBERT. *Psychologie de la sensibilité.* Paris: Librairie Armand Colin, 1954. Pp. 224. Paper, 250 fr.

COONAN, THOMAS L. *The Irish Catholic Confederacy and the Puritan Revolution.* New York: Columbia Univ. Press, 1954. Pp. xii + 402. $6.00.

DE MORGAN, AUGUSTUS. *A Budget of Paradoxes.* 2d ed. by David Eugene Smith with a new introd. by Ernest Nagel. New York: Dover Publns., 1954. Pp. 387. $4.95.

De Vries, Joseph, s.j. *Critica.* 2d ed. "Institutiones Philosophiae Scholasticae," No. 2. Barcelona: Herder, 1954. Pp. xi + 210. Paper.

Dixon, W. Macneile. *The Human Situation.* New York: St. Martin's Press, 1954. Pp. 448. $3.50.

Gardet, Louis. *La cité musulmane. Vie sociale et politique.* Paris: Vrin, 1954. Pp. 400. Paper.

Hafford, Gabriel W., and Kolanda, George. *The 1955 Christian Life Calendar.* Milwaukee: Bruce Pub. Co., 1954. $1.00.

Hunter, Edwin R. *Shakspere and Common Sense.* Boston: Christopher Pub. Co., 1954. Pp. 312. $4.00.

Janssens, Louis. *Droits personnels et autorité.* Louvain: Nauwelaerts, 1954. Pp. iv + 80. Paper, 72¢ (36 fr.)

Liberté et vérité. By the Professors of the Catholic University of Louvain. Louvain: Nauwelaerts, 1954. Pp. 292. Paper, $1.92.

Lichtigfeld, Adolph. *Jasper's Metaphysics.* Foreword by Karl Jaspers. London: Colobri Press, Ltd., 1954. Pp. 120. 10/6.

Maritain, Jacques. *An Essay on Christian Philosophy.* Tr. by Edward H. Flannery. New York: Philosophical Lib., 1955. Pp. xi + 116. $2.75.

Martz, Louis L. *The Poetry of Meditation: A Study in English Religious Literature of the Seventeenth Century.* New Haven: Yale Univ. Press, 1954. Pp. xiv + 375. $5.00.

McGill, John M. *The Wheat from the Chaff.* Boston: Christopher Pub. Co., 1954. Pp. 234. $2.75.

Runes, Dagobert D. (ed.). *A Treasury of Philosophy.* New York: Philosophical Lib., 1954. Pp. 1280. $15.00.

Salman, D. H., o.p. *La place de la philosophie dans l'université idéale.* "Conférence Albert-le-Grand," 1954. Montréal: Institut d'Études Médiévales, 1954. Pp. 67.

Saw, Ruth Lydia. *Leibniz.* Baltimore: Penguin Books, 1954. Pp. 240. 65¢

ST. LOUIS UNIVERSIT

A Jesuit Institution *Founded*

"Democracy is built upon the bedrock of Christian education . . ."

Constituent Schools

Labor College
School of Law
Graduate School
School of Nursing
School of Divinity
School of Medicine
School of Dentistry
School of Social Service
Institute of Technology
Institute of Social Science
College of Arts and Sciences
School of Commerce and Finance
College of Philosophy and Letters
Parks College of Aeronautical Technology

Corporate Colleges

Webster College
Maryville College
Fontbonne College
St. Mary's Junior College
Notre Dame Junior College

Saint Louis University owns and operates

Radio Station WEW

Saint Louis 3 Missouri